

Attachment 2

To

Carl Piercy

Date

June 26, 1984

From

Paul Marshall

Location/Tel.

Environmental Services
Dublin

Subject

Santa Fe Springs,
Solvent Dike Area Assessment

Copies To

D.A. Davis
A.M. McMahon
W.B. Westrope
D.L. Wettstead

M-Kesson

Intra Company

Correspondence

85518

The project scope, schedule and cost estimate for the soil sampling and analysis requested in your June 25 memo is summarized below.

The objective of this project is to sample select locations within the solvent dike area and assess potential subsurface contamination.

This will involve the following tasks:

- . MES will collect soil samples with a portable 2-inch auger at 4 locations inside an above-ground tank storage area. Samples will be collected at approximate depths of 1, 3, and 6 feet.
- . For each location, samples at 1 and 6-foot depths will be analyzed by GC/MS, purge and trap US EPA Method 624 for volatile priority pollutant organics. A total of 8 samples will be analyzed. Intermediate samples at 3-foot depths will be available for analysis if we mutually agree on their informational value. ←

The present schedule to accomplish the above scope is as follows:

- 1) Collect samples by June 29, 1984.
- 2) Provide final report by July 20, 1984.

The cost estimate for this project is summarized as follows:

| | |
|---|--------------|
| 1) Engineering, time and materials, labor | \$2,100 |
| Other direct cost, travel, etc. | 250 |
| 2) Analytical | <u>1,600</u> |
| TOTAL COST ESTIMATE | \$3,950 |

If you have any questions or changes to this proposal, please call.

JS 008315

MKIL02779

SAMPLE RESULTS RECAP
(Parts per Million)

| Sample | B-2 | | B-3 | | B-4 | | B-5 |
|-------------------------|-------------|----------|-------------|----------|-------------|----------|--------------|
| Location | <u>Dike</u> | | <u>Dike</u> | | <u>Dike</u> | | <u>Ditch</u> |
| Depth, ft. | <u>1</u> | <u>6</u> | <u>1</u> | <u>6</u> | <u>1</u> | <u>6</u> | <u>3</u> |
| <u>Components Found</u> | | | | | | | |
| Benzene | | | | | | | 0.001 |
| Chloroform | 1 | 0.75 | 0.80 | | 1.0 | | |
| 1,2-Dichloroethane | | | | 0.02 | | 0.8 | 0.004 |
| 1,1-Dichloroethene | | | | | | 0.8 | 0.002 |
| Ethyl Benzene | | 0.06 | | 0.03 | | 0.85 | |
| Methylene Chloride | | | | 1.1 | | 2.5 | 0.10 |
| Tetrachloroethene | | 0.89 | 0.22 | 0.67 | | 64 | 0.085 |
| Toluene | 0.12 | 0.1 | | 0.07 | | 2.0 | |
| 1,1,1-Trichloroethane | 0.20 | 0.2 | | 0.18 | | 10.0 | 0.085 |
| 1,1,2-Trichloroethane | | | | | | | |
| Acetone | 50 | 1.5 | 0.80 | 0.24 | 7.0 | | 0.03 |
| Isopropanol | 45 | | | 0.2 | | | |
| 2-Butanone | 36 | | | 2.10 | | | |
| Xylenes | | 0.32 | | 0.09 | | 5.8 | |
| Trichloroethene | | 0.03 | | 0.07 | | | 0.008 |
| 1,1-dichloroethane | | | | | | | 0.002 |

MKGM000155

MKIL32905

McKESSON ENVIRONMENTAL SERVICES
PRIORITY POLLUTANT ANALYSIS


Lab I.D.: 14707

7154-QD

Sample I.D.: B2-1 ft.

Santa Fe Springs

| VOLATILES | CONCENTRATION | OTHER COMPOUNDS FOUND | CONCENTRATION |
|--------------------------------|---------------|-----------------------|---------------|
| | ng/g(ppb) | | ng/g(ppb) |
| benzene | ND | Acetone | ~ 50,000 |
| bromodichloromethane | ND | IPA | ~ 45,000 |
| bromoform | ND | 2-Butanone | ~ 36,000 |
| bromomethane | ND | | |
| carbon tetrachloride | ND | | |
| chlorobenzene | ND | | |
| chloroethane | ND | | |
| 2-chloroethylvinyl ether | ND | | |
| chloroform | 1000 | | |
| chloromethane | ND | | |
| dibromochloromethane | ND | | |
| 1,2-and/or 1,4-dichlorobenzene | ND | | |
| 1,3-dichlorobenzene | ND | | |
| 1,1-dichloroethane | ND | | |
| 1,2-dichloroethane | ND | | |
| 1,1-dichloroethene | ND | | |
| trans-1,2,-dichloroethene | ND | | |
| 1,2-dichloropropane | ND | | |
| cis-1,3,-dichloropropene | ND | | |
| trans-1,3 -dichloropropene | ND | | |
| ethyl benzene | ND | | |
| methylene chloride | ND | | |
| 1,1,2,2-tetrachloroethane | ND | | |
| tetrachloroethene | ND | | |
| toluene | 120 | | |
| 1,1,1-trichloroethane | 200 | | |
| 1,1,2-trichloroethane | ND | | |
| trichloroethene | ND | | |
| vinyl chloride | ND | | |


N. W. Flynn, Laboratory Manager

Detection Limits: 100-1000 ng/g

ND = Not Detected

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.


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PRIORITY POLLUTANT ANALYSIS

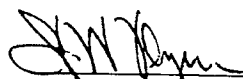
Lab I.D.: 14709
Sample I.D.: B2-6 ft.

7154-QD
Santa Fe Springs

| <u>CONCENTRATION</u> | | <u>CONCENTRATION</u> | |
|--------------------------------|------------------|------------------------------|------------------|
| <u>VOLATILES</u> | <u>ng/g(ppb)</u> | <u>OTHER COMPOUNDS FOUND</u> | <u>ng/g(ppb)</u> |
| benzene | ND | Xylenes | 320 |
| bromodichloromethane | ND | Acetone | ~ 1,500 |
| bromoform | ND | | |
| bromomethane | ND | | |
| carbon tetrachloride | ND | | |
| chlorobenzene | ND | | |
| chloroethane | ND | | |
| 2-chloroethylvinyl ether | ND | | |
| chloroform | 750 | | |
| chloromethane | ND | | |
| dibromochloromethane | ND | | |
| 1,2-and/or 1,4-dichlorobenzene | ND | | |
| 1,3-dichlorobenzene | ND | | |
| 1,1-dichloroethane | ND | | |
| 1,2-dichloroethane | ND | | |
| 1,1-dichloroethene | ND | | |
| trans-1,2,-dichloroethene | ND | | |
| 1,2-dichloropropane | ND | | |
| cis-1,3,-dichloropropene | ND | | |
| trans-1,3 -dichloropropene | ND | | |
| ethyl benzene | 55 | | |
| methylene chloride | ND | | |
| 1,1,2,2-tetrachloroethane | ND | | |
| tetrachloroethene | 890 | | |
| toluene | 98 | | |
| 1,1,1-trichloroethane | 200 | | |
| 1,1,2-trichloroethane | ND | | |
| trichloroethene | 29 | | |
| vinyl chloride | ND | | |


N. W. Flynn, Laboratory Manager

Detection Limits: 25-250 ng/g
ND = Not Detected
* = Compound detected; concentration below level for accurate quantitation.
** = Estimated value; compound saturated detector.


N. W. Flynn, Laboratory Manager

Detection Limits: 25-250 ng/g

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* = Compound detected; concentration below level for accurate quantitation.

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MKGM000157

McKESSON ENVIRONMENTAL SERVICES
PRIORITY POLLUTANT ANALYSIS

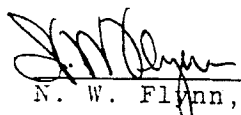
Lab I.D.: 14710

7154-QD

Sample I.D.: B3-1 ft.

Santa Fe Springs

| CONCENTRATION | | CONCENTRATION | |
|--------------------------------|-----------|-----------------------|-----------|
| VOLATILES | ng/g(ppb) | OTHER COMPOUNDS FOUND | ng/g(ppb) |
| benzene | ND | Acetone | ~ 800 |
| bromodichloromethane | ND | | |
| bromoform | ND | | |
| bromomethane | ND | | |
| carbon tetrachloride | ND | | |
| chlorobenzene | ND | | |
| chloroethane | ND | | |
| 2-chloroethylvinyl ether | ND | | |
| chloroform | 800 | | |
| chloromethane | ND | | |
| dibromochloromethane | ND | | |
| 1,2-and/or 1,4-dichlorobenzene | ND | | |
| 1,3-dichlorobenzene | ND | | |
| 1,1-dichloroethane | ND | | |
| 1,2-dichloroethane | ND | | |
| 1,1-dichloroethene | ND | | |
| trans-1,2,-dichloroethene | ND | | |
| 1,2-dichloropropane | ND | | |
| cis-1,3,-dichloropropene | ND | | |
| trans-1,3 -dichloropropene | ND | | |
| ethyl benzene | ND | | |
| methylene chloride | ND | | |
| 1,1,2,2-tetrachloroethane | ND | | |
| tetrachloroethene | 220 | | |
| toluene | ND | | |
| 1,1,1-trichloroethane | ND | | |
| 1,1,2-trichloroethane | ND | | |
| trichloroethene | ND | | |
| vinyl chloride | ND | | |


N. W. Flynn, Laboratory Manager

Detection Limits: 25-250 ng/g

ND = Not Detected

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

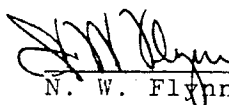
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McKESSON ENVIRONMENTAL SERVICES
PRIORITY POLLUTANT ANALYSIS

Lab I.D.: 14712
Sample I.D.: B3-6 ft.

7154-QD
Santa Fe Springs

| <u>VOLATILES</u> | <u>CONCENTRATION</u> | <u>OTHER COMPOUNDS FOUND</u> | <u>CONCENTRATION</u> |
|--------------------------------|----------------------|------------------------------|----------------------|
| | <u>ng/g(ppb)</u> | | <u>ng/g(ppb)</u> |
| benzene | ND | Xylenes | 92 |
| bromodichloromethane | ND | Acetone | ~ 240 |
| bromoform | ND | IPA | ~ 200 |
| bromomethane | ND | 2-Butanone | ~ 2100 |
| carbon tetrachloride | ND | | |
| chlorobenzene | ND | | |
| chloroethane | ND | | |
| 2-chloroethylvinyl ether | ND | | |
| chloroform | ND | | |
| chloromethane | ND | | |
| dibromochloromethane | ND | | |
| 1,2-and/or 1,4-dichlorobenzene | ND | | |
| 1,3-dichlorobenzene | ND | | |
| 1,1-dichloroethane | ND | | |
| 1,2-dichloroethane | 17 | | |
| 1,1-dichloroethene | ND | | |
| trans-1,2,-dichloroethene | ND | | |
| 1,2-dichloropropane | ND | | |
| cis-1,3,-dichloropropene | ND | | |
| trans-1,3 -dichloropropene | ND | | |
| ethyl benzene | 25 | | |
| methylene chloride | 1100 | | |
| 1,1,2,2-tetrachloroethane | ND | | |
| tetrachloroethene | 670 | | |
| toluene | 65 | | |
| 1,1,1-trichloroethane | 180 | | |
| 1,1,2-trichloroethane | ND | | |
| trichloroethene | 70 | | |
| vinyl chloride | ND | | |


N. W. Flynn, Laboratory Manager

Detection Limits: 1-10 ng/g

ND = Not Detected

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MKGM000159

McKESSON ENVIRONMENTAL SERVICES
PRIORITY POLLUTANT ANALYSIS

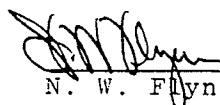
Lab I.D.: 14713

7154-QD

Sample I.D.: B4-1 ft.

Santa Fe Springs

| CONCENTRATION | | CONCENTRATION | |
|--------------------------------|-----------|-----------------------|-----------|
| VOLATILES | ng/g(ppb) | OTHER COMPOUNDS FOUND | ng/g(ppb) |
| benzene | ND | Acetone | ~ 7000 |
| bromodichloromethane | ND | | |
| bromoform | ND | | |
| bromomethane | ND | | |
| carbon tetrachloride | ND | | |
| chlorobenzene | ND | | |
| chloroethane | ND | | |
| 2-chloroethylvinyl ether | ND | | |
| chloroform | 1000 | | |
| chloromethane | ND | | |
| dibromochloromethane | ND | | |
| 1,2-and/or 1,4-dichlorobenzene | ND | | |
| 1,3-dichlorobenzene | ND | | |
| 1,1-dichloroethane | ND | | |
| 1,2-dichloroethane | ND | | |
| 1,1-dichloroethene | ND | | |
| trans-1,2,-dichloroethene | ND | | |
| 1,2-dichloropropane | ND | | |
| cis-1,3,-dichloropropene | ND | | |
| trans-1,3 -dichloropropene | ND | | |
| ethyl benzene | ND | | |
| methylene chloride | ND | | |
| 1,1,2,2-tetrachloroethane | ND | | |
| tetrachloroethene | ND | | |
| toluene | ND | | |
| 1,1,1-trichloroethane | ND | | |
| 1,1,2-trichloroethane | ND | | |
| trichloroethene | ND | | |
| vinyl chloride | ND | | |


N. W. Flynn, Laboratory Manager

Detection Limits: 100-1000 ng/g
ND = Not Detected

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MKGM000160

McKESSON ENVIRONMENTAL SERVICES
PRIORITY POLLUTANT ANALYSIS


Lab I.D.: 14715

7154-QD

Sample I.D.: B4-6 ft.

Santa Fe Springs

| VOLATILES | CONCENTRATION | OTHER COMPOUNDS FOUND | CONCENTRATION |
|--------------------------------|---------------|-----------------------|---------------|
| | ng/g(ppb) | | ng/g(ppb) |
| benzene | ND | m-xylene | 3300 |
| bromodichloromethane | ND | p-xylene | 2500 |
| bromoform | ND | | |
| bromomethane | ND | | |
| carbon tetrachloride | ND | | |
| chlorobenzene | ND | | |
| chloroethane | ND | | |
| 2-chloroethylvinyl ether | ND | | |
| chloroform | ND | | |
| chloromethane | ND | | |
| dibromochloromethane | ND | | |
| 1,2-and/or 1,4-dichlorobenzene | ND | | |
| 1,3-dichlorobenzene | ND | | |
| 1,1-dichloroethane | ND | | |
| 1,2-dichloroethane | 800 | | |
| 1,1-dichloroethene | 800 | | |
| trans-1,2,-dichloroethene | ND | | |
| 1,2-dichloropropane | ND | | |
| cis-1,3,-dichloropropene | ND | | |
| trans-1,3 -dichloropropene | ND | | |
| ethyl benzene | 850 | | |
| methylene chloride | 2500 | | |
| 1,1,2,2-tetrachloroethane | ND | | |
| tetrachloroethene | 64,000 | | |
| toluene | 2000 | | |
| 1,1,1-trichloroethane | 10,000 | | |
| 1,1,2-trichloroethane | ND | | |
| trichloroethene | ND | | |
| vinyl chloride | ND | | |


N. W. Flynn, Laboratory Manager

Detection Limits: 500-5000 ng/g

ND = Not Detected

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

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McKESSON ENVIRONMENTAL SERVICES
PRIORITY POLLUTANT ANALYSIS

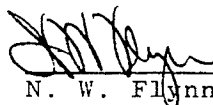
Lab I.D.: 14716

7154-QD

Sample I.D.: B5-3 Ditch

Santa Fe Springs

| VOLATILES | CONCENTRATION | OTHER COMPOUNDS FOUND | CONCENTRATION |
|--------------------------------|---------------|-----------------------|---------------|
| | ng/g(ppb) | | ng/g(ppb) |
| benzene | 1 | Acetone | ~ 30 |
| bromodichloromethane | ND | | |
| bromoform | ND | | |
| bromomethane | ND | | |
| carbon tetrachloride | ND | | |
| chlorobenzene | ND | | |
| chloroethane | ND | | |
| 2-chloroethylvinyl ether | ND | | |
| chloroform | ND | | |
| chloromethane | ND | | |
| dibromochloromethane | ND | | |
| 1,2-and/or 1,4-dichlorobenzene | ND | | |
| 1,3-dichlorobenzene | ND | | |
| 1,1-dichloroethane | 2 | | |
| 1,2-dichloroethane | 4 | | |
| 1,1-dichloroethene | 2 | | |
| trans-1,2,-dichloroethene | ND | | |
| 1,2-dichloropropane | ND | | |
| cis-1,3,-dichloropropene | ND | | |
| trans-1,3 -dichloropropene | ND | | |
| ethyl benzene | ND | | |
| methylene chloride | 100 | | |
| 1,1,2,2-tetrachloroethane | ND | | |
| tetrachloroethene | 85 | | |
| toluene | ND | | |
| 1,1,1-trichloroethane | 85 | | |
| 1,1,2-trichloroethane | ND | | |
| trichloroethene | 8 | | |
| vinyl chloride | ND | | |



N. W. Flynn, Laboratory Manager

Detection Limits: 1-10 ng/g

ND = Not Detected

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MKGM000162

Attachment 3

KH



McKesson

7514-UD

May 21, 1986

Mr. Kenneth Hughes
Waste Management Specialist
California Department of Health Services
Toxic Substance Control Division
107 South Broadway, Room 7011
Los Angeles, CA 90012

Subject: Site Investigation Results
McKesson Chemical, Sorensen Street Facility
Santa Fe Springs, California
CAD060395753

Dear Mr. Hughes:

This letter presents the results of the subject investigation since March 18, 1986.

The investigation entails the following items:

- o completion of 3 slant soil borings (SB1, SB2, and SB3)
- o completion of 4 monitoring wells (MW1, MW2, MW3, and MW4)
- o laboratory analysis of 6 soil samples and 3 water samples
- o groundwater level survey and movement analysis.

Figure 1 shows the location of soil borings and monitoring wells.

Attachment A includes soil boring logs and well schematic diagrams for SB1, SB2, SB3, MW1, MW2, MW3, and MW4.

Table 1 shows the depth intervals where soil samples were taken and selected for laboratory analysis.

Attachment B includes laboratory analysis of soil samples and water samples

Figure 2 shows the results of the groundwater level survey and groundwater movement analysis.

It appears that detectable concentrations of various products were found in the shallow perched groundwater located at about 25 feet below land surface. Monitor well MW2 was found to be

MCK0008051

Mr. Kenneth Hughes

May 16, 1986

Page two

wet but not enough to produce water for laboratory analysis.
Instead a wet soil sample taken at 25 feet was selected for
laboratory analysis.

Significantly reduced concentrations of products were detected
in the clayey layer immediately underlying the perched
groundwater.

The groundwater level survey conducted on April 9, 1986, showed
a southwest movement in the perched groundwater (see Figure 2).

McKesson is currently preparing a plan for further site
investigation and also is conducting a well survey up-gradient
and down-gradient of the subject facility.

If you have any questions, please contact me.

Very truly yours,

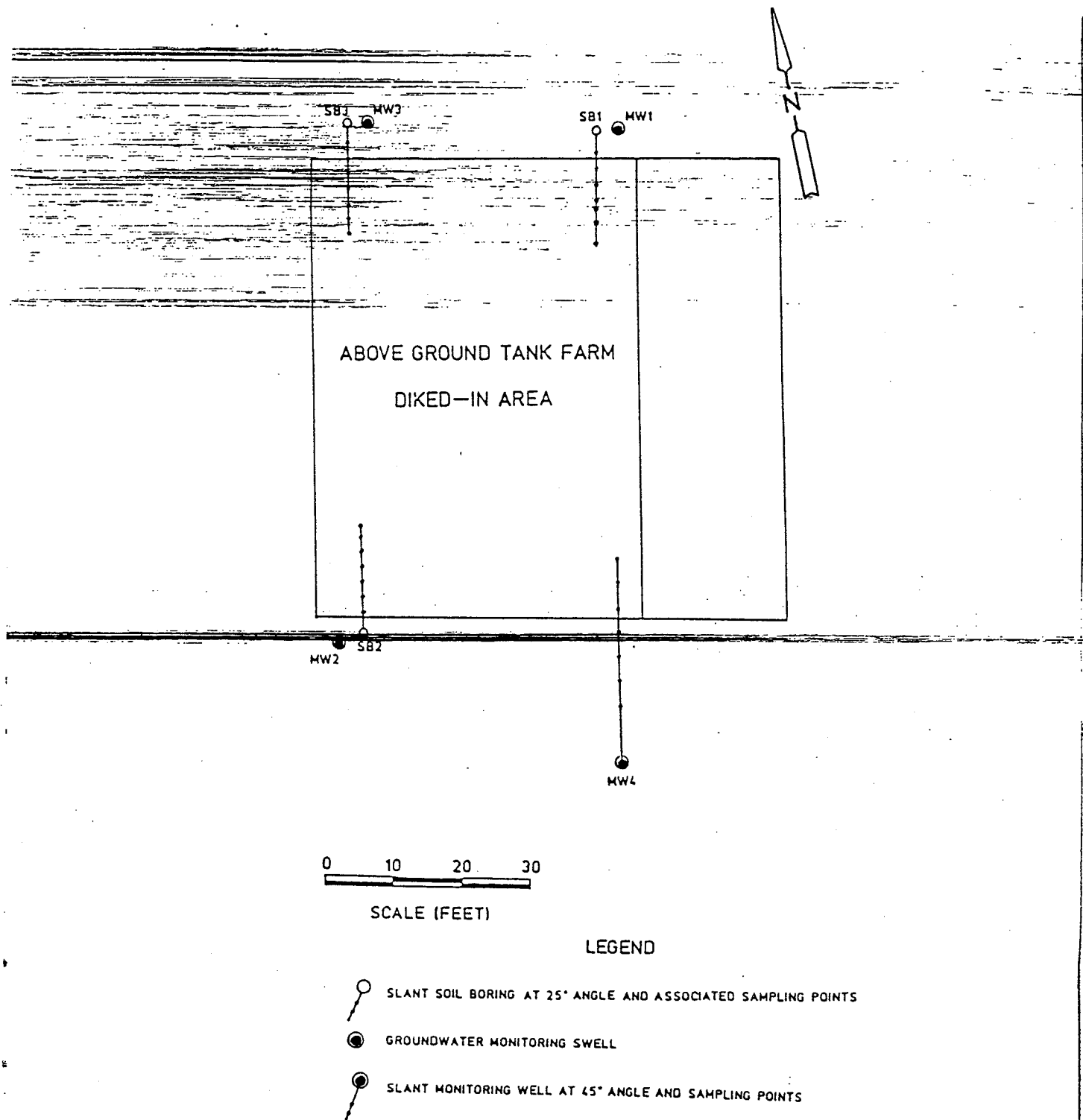
Nick Gardner *ajc*

Nick K. Gardner
Regional Regulatory Manager

NKG/kdr

Attachments

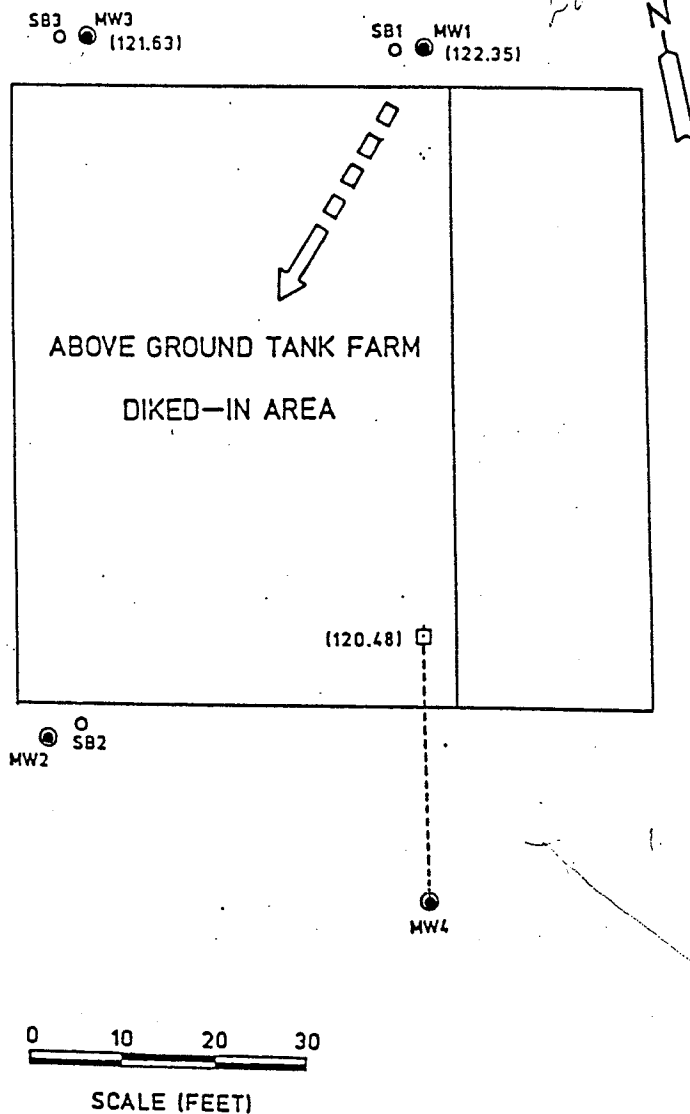
MCK0008052



LOCATION MAP OF BORINGS AND WELLS AT MCKESSON CHEMICAL
COMPANY'S SANTA FE SPRING FACILITY

FIGURE 1

MCK0008053



LEGEND

- SLANT BORING
- GROUNDWATER MONITORING WELL AND ELEVATION
OF GROUNDWATER LEVEL (IN FEET-MSL) - 4/9/86
- ↘ GROUNDWATER FLOW DIRECTION
- GROUNDWATER LEVEL ELEVATION (IN FEET-MSL)
IN WELL MW4 - 4/9/86

ANALYSIS OF GROUNDWATER MOVEMENT

FIGURE 2

MCK0008077

TABLE-1 Soil Samples Collected at Various Depths from Borings
and Groundwater Monitoring Wells (in Feet)

| | |
|-------|---|
| SB1 | 5, <u>10</u> , <u>15</u> , 20, <u>25</u> , <u>30</u> , 33.5, 35, 36, <u>37</u> , 38 |
| SB2 | 5, 10, 15, 20, 25, 30, 33, 34, <u>35</u> |
| SB3 | 5, 10, 15, 20, 25, 30, 33, 34, 35, <u>36</u> |
| MW1 * | 5, 10, 15, 20, 26 |
| MW2 | 5, 10, 15, 20, <u>25</u> , 27, 28 |
| MW3 * | 5, 10, 15, 20, 25, 27 |
| MW4 * | 11, 16, 21, 26, 31, 36, 41 |

NOTE: The depths underlined are the soil samples that have
been analyzed in the laboratory.

*: Water sample has been analyzed in the laboratory.

Attachment A

Soil Boring Logs

SB1, SB2, SB3, MW1, MW2, MW3, MW4

Well Schematic Diagrams

MW1, MW2, MW3, MW4

MCK0008055

GEOLOGICAL BORING LOG

BOREHOLE NO. : SB1

| DEPTH (FEET) | SAMPLE | | STANDARD SOIL COLOR CODE | LITHOLOGICAL DESCRIPTION | | | TEXTURE COMPACTNESS CEMENTATION PLASTICITY & MINERAL | MOISTURE CONTENT | USCS |
|-----------------|---------|------|--|--|-----------|----------------------|---|---------------------|-------|
| | CUTTING | CORE | | ROUNDNESS GRAIN SIZE | LITHOLOGY | % OF COARSE GRAIN | | | |
| 4.5 5 | | X | 10 YR 4/2 Dark Yellow Brown | Very fine sand and silt Coarse grain: less than 1% | | | Dense Slightly plastic Odor | Mod.dry | ML |
| 9.1 10 | | X | 10 YR 4/4 Moderate Yellow Brown | Coarse to fine sand Coarse grain, gravel 1% Max. size 10 mm | | | Dense Cohesionless non-plastic Odor | | SW |
| 13.6 15 | | X | 10 YR 4/4 Moderate Yellow Brown | Coarse sand with little fine grains Coarse grains: gravel 10% Max. size - 12mm | | | Dense Loose Cohesionless Odor | Moist | SP |
| 18.1 20 | | X | 10 Y 4/4 Light olive | Coarse to medium-grained sand Coarse grains: gravel - 1% Max. size 3mm | | | Dense Loose Cohesionless non-plastic Odor | Moist | SW |
| 22.7 25 | | X | 10 YR 4/2 Dark yellow Brown | Coarse sand and gravel 0% grains | | | Cohesionless Odor weakened | Satur- ated | GW-SP |

NOTE: SOIL COLOR CODE FOLLOWS THE STANDARD IN 'ROCK COLOR CHART' PUBLISHED BY GSA.

McKESSON ENVIRONMENTAL SERVICES, INC.

PROJECT NO.: 7514 UD

LOGGED BY:
I-Sen Wang

PROJECT NAME & LOCATION: McKesson Chemical - Santa Fe Springs

DATE: 3/18/86

TITLE:
Geohydrologist

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MCK0008056

GEOLOGICAL BORING LOG

BOREHOLE NO. : SB 1

| DEPTH (FEET) | SAMPLE | | STANDARD SOIL COLOR CODE | LITHOLOGICAL DESCRIPTION | | | TEXTURE COMPACTNESS CEMENTATION PLASTICITY & MINERAL | MOISTURE CONTENT | USCS |
|------------------------|---------|------|--------------------------------|---|-----------|----------------------|---|---------------------|------|
| | CUTTING | CORE | | ROUNDNESS GRAIN SIZE | LITHOLOGY | % OF COARSE GRAIN | | | |
| Vert. Slant 27.2 30 | | X | 5 YR 4/6 Light brown | Clay 0% coarse | | | Dense, stiff moderately plastic Slight odor | Moist | CL |
| 30.4 33.5 34.5 | | X | 5 YR 4/6 Light brown | Clay | | | Dense Moderately plastic Micaceous Slight odor | Moist | CL |
| 31.7 35 | | X | 5 YR 4/6 Light brown | Clayey silt less than 1% coarse grains | | | Dense Slight odor | Moist | ML |
| 32.6 36 | | X | 5 YR 4/6 Light brown | Clayey silt Less than 1% coarse grains | | | Dense Slight odor | Moist | ML |
| 33.5 37 | | X | 5 YR 4/6 Light brown | Clayey silt Less than 1% coarse grains | | | Dense Slight odor | Moist | ML |

NOTE: SOIL COLOR CODE FOLLOWS THE STANDARD IN "ROCK COLOR CHART" PUBLISHED BY GSA.

McKESSON ENVIRONMENTAL SERVICES, INC.

PROJECT NO.: 7514 UD

LOGGED BY:
I-Sen Wang

PROJECT NAME & LOCATION: McKesson Chemical - Santa Fe Springs

DATE: 3/18/86

TITLE:
Geohydrologist

PAGE 2 OF 3

MCK0008057

BOREHOLE NO. : SB1

NOTE: SOIL COLOR CODE FOLLOWS THE STANDARD IN "ROCK COLOR CHART" PUBLISHED BY GSA.

PROJECT NO.: 7514 UD

PROJECT NAME & LOCATION: McKesson Chemical - Santa Fe Springs

DATE: 3/18/86

PAGE 3 OF 3

MCK0008058

GEOLOGICAL BORING LOG

BOREHOLE NO. : SB2

| DEPTH (FEET) | SAMPLE | | STANDARD SOIL COLOR CODE | LITHOLOGICAL DESCRIPTION | | | TEXTURE COMPACTNESS CEMENTATION PLASTICITY & MINERAL | MOISTURE CONTENT | USCS |
|-----------------|-------------|---------|--------------------------------|--|---|----------------------|---|---------------------|-------|
| | VERT. SLANT | CUTTING | | ROUNDNESS GRAIN SIZE | LITHOLOGY | % OF COARSE GRAIN | | | |
| 7.5 | 5 | | X | 10 YR 3/2 Dark yellow Brown | Clayey silt Less than 1% coarse grains | | Dense Cohesionless Slight odor | Moist | ML |
| 9.1 | 10 | | X | 10 YR 5/4 Moderate Yellow Brown | Clayey silt and sand 5% coarse grains (gravel) Max. size 4mm | | Dense Cohesive, and Slightly plastic No odor | Moist | ML-SC |
| 13.6 | 15 | | X | 10 YR 5/4 Moderate Yellow Brown | Coarse to medium-grained sand 5% coarse grains Max. size 5mm | | Loose No odor | Moist | SP-SW |
| 18.9 | 20 | | X | 10 YR 5/4 Moderate Yellow Brown | Coarse to medium-grained sand 3% coarse grain (gravel) Max. size 20mm | | Loose No odor | Moist | SP-SW |
| 22.7 | 25 | | X | 10 YR 5/4 Moderate Yellow Brown | Coarse-grained sand 5% coarse-grains (gravel) Max. size 5mm | | Loose No odor | Moist | SW |

NOTE: SOIL COLOR CODE FOLLOWS THE STANDARD IN "ROCK COLOR CHART" PUBLISHED BY GSA.

McKESSON ENVIRONMENTAL SERVICES, INC.

PROJECT NO.: 7514 UD

LOGGED BY:
I-Sen Wang

PROJECT NAME & LOCATION: McKesson Chemical - Santa Fe Springs

DATE: 3/18/86

TITLE:
Geohydrologist

PAGE 1 OF 2

MCK0008059

MCK0008060

| GEOLOGICAL BORING LOG | | | | | | BOREHOLE NO. : SB2 | | | |
|--|---------|------|--|---|----------------------|----------------------|---|---------------------|-------|
| DEPTH (FEET) | SAMPLE | | STANDARD SOIL COLOR CODE | LITHOLOGICAL DESCRIPTION | | | TEXTURE COMPACTNESS CEMENTATION PLASTICITY & MINERAL | MOISTURE CONTENT | USCS |
| | CUTTING | CORE | | ROUNDNESS GRAIN SIZE | LITHOLOGY | % OF COARSE GRAIN | | | |
| 27.2 30 | | XA | 10 YR 5/4 Moderate Yellow Brown | Coarse-grained sand 20% coarse grain (gravel) Max. size 5mm | | | | Satur- ated | SP/ML |
| 30 | | X | 10 YR 6/6 Dark yellow Orange | Clayey silt Less than 1% coarse grain | | | Dense Micaceous No odor | Moist | ML-CL |
| 29.9 33 | | X | 10 YR 6/6 Dark yellow Orange | Clayey silt Less than 1% coarse grain | | | Dense Micaceous No odor | Moist | ML-CL |
| 30.8 34 | | X | 10 YR 6/6 Dark yellow Orange | Clayey silt Less than 1% coarse grain | | | Dense Micaceous No odor | Moist | ML |
| 31.7 35 | | X | 10 YR 6/6 Dark yellow Orange | Medium to fine-grained sand and silt | | | Dense Cohesionless Slightly plastic Micaceous Slight odor | | ML |
| NOTE: SOIL COLOR CODE FOLLOWS THE STANDARD IN 'ROCK COLOR CHART' PUBLISHED BY GSA. | | | | | | | | | |
| McKESSON ENVIRONMENTAL SERVICES, INC. | | | | | PROJECT NO.: 7514 UD | | LOGGED BY: I-Sen Wang | | |
| PROJECT NAME & LOCATION: McKesson Chemical - Santa Fe Springs | | | | | DATE: 3/18/86 | | TITLE: Geohydrologist | | |
| | | | | | | | PAGE 2 OF 2 | | |

GEOLOGICAL BORING LOG

BOREHOLE NO. : SB3

| DEPTH (FEET) | | SAMPLE | | STANDARD SOIL COLOR CODE | LITHOLOGICAL DESCRIPTION | | | TEXTURE COMPACTNESS CEMENTATION PLASTICITY & MINERAL | MOISTURE CONTENT | USCS |
|-----------------|----|---------|------|--------------------------------|---|-----------|----------------------|---|---------------------|------|
| | | CUTTING | CORE | | ROUNDNESS GRAIN SIZE | LITHOLOGY | % OF COARSE GRAIN | | | |
| 4.5 | 5 | | X | 10 YR 3/2 | Fine-grained, silty clay Less than 1% coarse grain | | | Micaceous Strong odor | Moist | CL |
| | | | | Dark yellow | | | | | | |
| | | | | Brown | | | | | | |
| | | | | | | | | | | |
| 9.1 | 10 | | X | 10 YR 4/4 | Coarse to medium-grained clayey sand 7-10% coarse grains | | | Well graded Odor | Moist | SC |
| | | | | Moderate | | | | | | |
| | | | | Yellow brown | | | | | | |
| | | | | | | | | | | |
| 13.6 | 15 | | X | 10 YR 5/4 | Coarse to medium-grained 10% coarse grains | | | Poorly graded Odor | Moist | SP |
| | | | | Moderate | | | | | | |
| | | | | Yellow | | | | | | |
| | | | | Brown | | | | | | |
| 18.1 | 20 | | X | 10 YR 4/4 | Medium-grained sand 0% coarse grains | | | Moderately graded Odor | Moist | SW |
| | | | | Moderate | | | | | | |
| | | | | Yellow brown | | | | | | |
| | | | | | | | | | | |
| 22.7 | 25 | | X | 10 YR 5/4 | Coarse to medium-grained gravelly sand 10% coarse grains (gravel) Max. size 2-3cm | | | No odor | Moist | SP |
| | | | | Moderate | | | | | | |
| | | | | Yellow brown | | | | | | |
| | | | | | | | | | | |

NOTE: SOIL COLOR CODE FOLLOWS THE STANDARD IN "ROCK COLOR CHART" PUBLISHED BY GSA.

McKESSON ENVIRONMENTAL SERVICES, INC.

PROJECT NO.: 7514 UD

LOGGED BY:
Earl LaPensee

PROJECT NAME & LOCATION: McKesson Chemical - Santa Fe Springs

DATE: 3/19/86

TITLE:
Hydrogeologist

PAGE 1 OF 2

MCK0008061

| GEOLOGICAL BORING LOG | | | | | | BOREHOLE NO. : SB3 | | | |
|-----------------------|---------|------|---|---|-----------|----------------------|---|---------------------|------|
| DEPTH (FEET) | SAMPLE | | STANDARD SOIL COLOR CODE | LITHOLOGICAL DESCRIPTION | | | TEXTURE COMPACTNESS CEMENTATION PLASTICITY & MINERAL | MOISTURE CONTENT | USCS |
| | CUTTING | CORE | | ROUNDNESS GRAIN SIZE | LITHOLOGY | % OF COARSE GRAIN | | | |
| 27.2 30 | | X | 10 YR 6/2 Pale yellow Brown | Slightly silty clay Less than 1% coarse grains | | | Plastic Slight odor | Mod. dry | CL |
| 30 33 | | X | 10 YR 5/4 Moderately Yellow brown | Slightly silty clay Less than 1% coarse grains | | | Moderately plastic Slight odor | Wet | CL |
| 30.8 34 | | X | 10 YR 5/4 Moderately Yellow Brown | Clayey silt Less than 1% coarse grain | | | Moderately plastic Slight odor | Wet | ML |
| 31.7 35 | | X | 10 YR 5/4 Moderately Yellow Brown | Silty clay Less than 1% coarse grains | | | Plastic Slight odor | Wet | CL |
| 32.6 36 | | X | 10 YR 5/4 to 10 YR 4/2 Mod. - Dark Yellow Brown | Silty clay Less than 1% coarse grains | | | Very plastic Odor | Satur- ated | CL |

NOTE: SOIL COLOR CODE FOLLOWS THE STANDARD IN "ROCK COLOR CHART" PUBLISHED BY GSA.

| | | |
|---|----------------------|--------------------------------------|
| McKESSON ENVIRONMENTAL SERVICES, INC. | PROJECT NO.: 7514 UD | LOGGED BY: Earl LaPensee/L. Dudus |
| PROJECT NAME & LOCATION: McKesson Chemical - Santa Fe Springs | DATE: 3/19/86 | TITLE: Hydrogeologists |
| PAGE 2 OF 2 | | |

MCK0008062

MCK0008063

| GEOLOGICAL BORING LOG | | | | | | BOREHOLE NO. : MW 1 | | | |
|-----------------------|---------|------|---------------------------------------|--|-----------|----------------------|---|---------------------|----------|
| DEPTH (FEET) | SAMPLE | | STANDARD SOIL COLOR CODE | LITHOLOGICAL DESCRIPTION | | | TEXTURE COMPACTNESS CEMENTATION PLASTICITY & MINERAL | MOISTURE CONTENT | USCS |
| | CUTTING | CORE | | ROUNDNESS GRAIN SIZE | LITHOLOGY | % OF COARSE GRAIN | | | |
| 5 | | X | 10 YR 3/2 Dark yellow Brown | Silty clay Less than 1% coarse grains | | | Slightly plastic Strong odor | Mod. Dry | CL |
| 10 | | X | 10 YR 4/4 Moderate Yellow brown | Medium to fine grained sand Minor clay 1-3% coarse grains Max. size 5mm | | | Non-plastic Strong odor | Moist Slightly | SC |
| 15 | | X | 10 YR 4/4 Moderate Yellow brown | Coarse-grained sand 10% coarse grains Max. size 10mm | | | Non-plastic Stron odor | Moist Slightly | SP |
| 20 | | X | 10 YR 4/2 Dark yellow Brown | Very coarse to coarse-grained sand with gravel 30% coarse grain (gravel) Max. size 50mm | | | Strong odor | Satur- ated | SP/CL-ML |
| 26 | | X | 10 YR Yellow brown | Silty clay | | | Dense, moderately plastic, cohesive | | CL |

NOTE: SOIL COLOR CODE FOLLOWS THE STANDARD IN "ROCK COLOR CHART" PUBLISHED BY GSA.

| | | | |
|---|--|----------------------|---------------------------|
| McKESSON ENVIRONMENTAL SERVICES, INC. | | PROJECT NO.: 7514 UD | LOGGED BY: Larry Dudus |
| PROJECT NAME & LOCATION: McKesson Chemical - Santa Fe Springs | | DATE: 3/19/86 | TITLE: Geologist |
| | | PAGE 1 | OF 1 |

GEOLOGICAL BORING LOG

BOREHOLE NO. : MW 2

| DEPTH (FEET) | SAMPLE | | STANDARD SOIL COLOR CODE | LITHOLOGICAL DESCRIPTION | | | TEXTURE COMPACTNESS CEMENTATION PLASTICITY & MINERAL | MOISTURE CONTENT | USCS |
|-----------------|---------|------|--|--|-----------|----------------------|---|---------------------|-------|
| | CUTTING | CORE | | ROUNDNESS GRAIN SIZE | LITHOLOGY | % OF COARSE GRAIN | | | |
| 5 | | X | 5 GY 3/2 Gray Olive Green | Coarse to fine-grained, gravelly, silty clay. 25% coarse grains (pebbles) Max. size - 1cm. | | | Moderately plastic (Strong odor) | Moist | CL |
| 10 | | X | 10 YR 4/4 Moderately Yellow Brown | Coarse to fine-grained sandy clay 7% coarse grains | | | Dense, stiff Micaceous (No odor) | Moist | CL-MH |
| 15 | | X | 10 YR 5/6 Dark Yellow Orange | Coarse to fine-grained, gravelly sand 5% coarse grains (pebbles) Max. diameter - 1 cm. | | | (Odor) | Moist | SW |
| 20 | | X | 10 YR 5/4 Moderately Yellow Brown | Coarse to medium-grained sand 33% coarse grain (gravel) Max. size - 5mm. | | | Slightly loose (Odor) | Moist | SW |
| 25 | | X | 10 YR 5/4 Moderately Yellow Brown | Coarse to medium-grained sand. 40% coarse grain (gravel) Max. size - 5mm | | | Slightly cohesive (Odor) | Moist | SW |

NOTE: SOIL COLOR CODE FOLLOWS THE STANDARD IN "ROCK COLOR CHART" PUBLISHED BY GSA.

McKESSON ENVIRONMENTAL SERVICES, INC.

PROJECT NO.: 7514 UD

LOGGED BY:
Larry Dudus

PROJECT NAME & LOCATION: McKesson Chemical - Santa Fe Springs

DATE: 3/20/86

TITLE:
Geologist

PAGE 1 OF 2

MCK0008064

BOREHOLE NO. : MW 2

NOTE: SOIL COLOR CODE FOLLOWS THE STANDARD IN 'ROCK COLOR CHART' PUBLISHED BY GSA.

PROJECT NO.: 7514 UD

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|--------------------------|
| LOGGED BY Larry Ducus |
|--------------------------|

DATE: 3/20/86

Geotagist

PAGE 2 OF 2

MCK0008065

GEOLOGICAL BORING LOG

BOREHOLE NO. : MW 3

| DEPTH (FEET) | SAMPLE | | STANDARD SOIL COLOR CODE | LITHOLOGICAL DESCRIPTION | | | TEXTURE COMPACTNESS CEMENTATION/ PLASTICITY & MINERAL | MOISTURE CONTENT | USCS |
|-----------------|---------|------|---|---|-----------|----------------------|--|---------------------|-------|
| | CUTTING | CORE | | ROUNDNESS GRAIN SIZE | LITHOLOGY | % OF COARSE GRAIN | | | |
| 5 | | X | 5 Y 2/2 Dark Olive Gray | Fine-grained silty clay Less than 1% coarse grains | | | Moderately plastic Micaceous Poorly graded (Odor) | Moist | CL-MH |
| 10 | | X | 10 YR 4/4 Moderately Yellow Brown | Fine to medium-grained sandy clay Less than 2% coarse grains, largely pebbles. Max. size 1 cm | | | Poorly graded Low plasticity (Slight odor) | Moist | SC |
| 15 | | X | 10 YR 5/4 Moderately Yellow Brown | Coarse to medium-grained sand 15% coarse grains (pebbles). Max. size - 1 cm | | | Moderately graded (Slight odor) | Moist | SW |
| 20 | | X | 10 YR 5/6 Dark Yellow Orange | Fine to medium-grained silty sand | | | Poorly graded Low Plasticity (Slight odor) | Moist | SM |
| 25 | | X | 10 YR 5/4 Moderately Yellow Brown | Medium-grained sand | | | Poorly graded (Slight odor) | Satur- ated | SP |

NOTE: SOIL COLOR CODE FOLLOWS THE STANDARD IN "ROCK COLOR CHART" PUBLISHED BY GSA.

McKESSON ENVIRONMENTAL SERVICES, INC.

PROJECT NO.: 7514 UD

LOGGED BY:
Earl LaPensee

PROJECT NAME & LOCATION: McKesson Chemical - Santa Fe Springs

DATE: 3/20/86

TITLE:
Hydrogeologist

PAGE 1 OF 2

MCK0008066

GEOLOGICAL BORING LOG

BOREHOLE NO. : MW 3

| DEPTH (FEET) | SAMPLE | | STANDARD SOIL COLOR CODE | LITHOLOGICAL DESCRIPTION | | | TEXTURE COMPACTNESS CEMENTATION PLASTICITY & MINERAL | MOISTURE CONTENT | USCS |
|-----------------|---------|------|---|---|-----------|----------------------|---|---------------------|-------|
| | CUTTING | CORE | | ROUNDNESS GRAIN SIZE | LITHOLOGY | % OF COARSE GRAIN | | | |
| 5 | | X | 5 Y 2/2 Dark Olive Gray | Fine-grained silty clay Less than 1% coarse grains | | | Moderately plastic Micaceous Poorly graded (Odor) | Moist | CL-MH |
| 10 | | X | 10 YR 4/4 Moderately Yellow Brown | Fine to medium-grained sandy clay Less than 2% coarse grains, largely pebbles. Max. size 1 cm | | | Poorly graded Low plasticity (Slight odor) | Moist | SC |
| 15 | | X | 10 YR 5/4 Moderately Yellow Brown | Coarse to medium-grained sand 15% coarse grains (pebbles). Max. size - 1 cm | | | Moderately graded (Slight odor) | Moist | SW |
| 20 | | X | 10 YR 5/6 Dark Yellow Orange | Fine to medium-grained silty sand | | | Poorly graded Low Plasticity (Slight odor) | Moist | SM |
| 25 | | X | 10 YR 5/4 Moderately Yellow Brown | Medium-grained sand | | | Poorly graded (Slight odor) | Satur- ated | SP |

NOTE: SOIL COLOR CODE FOLLOWS THE STANDARD IN "ROCK COLOR CHART" PUBLISHED BY GSA.

McKESSON ENVIRONMENTAL SERVICES, INC.

PROJECT NO.: 7514 UD

LOGGED BY:
Earl LaPensee

PROJECT NAME & LOCATION: McKesson Chemical - Santa Fe Springs

DATE: 3/20/86

TITLE:
Hydrogeologist

PAGE 1 OF 2

MCK0008067

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| GEOLOGICAL BORING LOG | BOREHOLE NO. : MW 3 |
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BOREHOLE NO. : MW 3

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NOTE: SOIL COLOR CODE FOLLOWS THE STANDARD IN "ROCK COLOR CHART" PUBLISHED BY GSA.

McKESSON ENVIRONMENTAL SERVICES, INC.

PROJECT NO.: 7514 UD

LOGGED BY: Earl LaPensee

PROJECT NAME & LOCATION: McKesson Chemical - Santa Fe Springs

DATE: 3/20/86

TITLE:
Hydrogeologist

PAGE 2 OF 2

MCK0008068

| GEOLOGICAL BORING LOG | | | | | | BOREHOLE NO. : MW 4 | | | |
|--------------------------|---------|----------|---|---|-----------|----------------------|---|---------------------|-------|
| DEPTH (FEET) | SAMPLE | | STANDARD SOIL COLOR CODE | LITHOLOGICAL DESCRIPTION | | | TEXTURE COMPACTNESS CEMENTATION PLASTICITY & MINERAL | MOISTURE CONTENT | USCS |
| | CUTTING | CORE | | ROUNDNESS GRAIN SIZE | LITHOLOGY | % OF COARSE GRAIN | | | |
| Vert. Slant 0-3.5 0-5 | X | | 5 Y 3/2 Olive Gray | Fine-grained, silty clay Less than 1% coarse grains | | | Soft, cohesive Moderately plastic Micaceous (Odor) | Moist | CL |
| 3.5-7.1 5-10 | X | | 5 Y 4/2 Light Olive Gray | Fine-grained silty clay Less than 1% coarse grains | | | Soft, cohesive Plastic, micaceous | Moist | CL |
| 7.8 11 | | X A&B | 10 YR 4/2 Dark Yellow Brown | Coarse to fine-grained gravelly clay 5% gravel | | | Soft, cohesive Moderately plastic Micaceous | Moist | CL-MH |
| 11.3 16 | | X | 10 YR 4/4 Moderately Yellow Brown | Fine-grained sandy clay 7% medium grain, Less than 1mm | | | Dense, soft, Cohesive Poorly graded (Odor) | Moist | CL-MH |
| 14.8 21 | | X | 10 YR 5/4 Mod. Yellow Brown | Coarse to fine-grained, silty sand 10% coarse grain (pebbles) Sub-angular to rounded Max. size - 1cm | | | Loose Well graded (Strong odor) | Moist | SW |

NOTE: SOIL COLOR CODE FOLLOWS THE STANDARD IN "ROCK COLOR CHART" PUBLISHED BY GSA.

| | | | | | |
|---|--|----------------------|---------------|-----------------------------|--------------------------|
| McKESSON ENVIRONMENTAL SERVICES, INC. | | PROJECT NO.: 7414 UD | | LOGGED BY: Earl LaPensee | |
| PROJECT NAME & LOCATION: McKesson Chemical - Santa Fe Springs | | | DATE: 3/21/86 | | TITLE: Hydrogeologist |
| | | | PAGE 11 | | OF 2 |

MCK0008069

GEOLOGICAL BORING LOG

BOREHOLE NO. : 1114

| CORRELATION NO. 1114 | | | | | | | | | | |
|----------------------|----|---------|------|-----------------------------------|--|-----------|----------------------|---|---------------------|------|
| DEPTH (FEET) | | SAMPLE | | STANDARD SOIL COLOR CODE | LITHOLOGICAL DESCRIPTION | | | TEXTURE COMPACTNESS CEMENTATION PLASTICITY & MINERAL | MOISTURE CONTENT | USCS |
| | | CUTTING | CORE | | ROUNDNESS GRAIN SIZE | LITHOLOGY | % OF COARSE GRAIN | | | |
| 18.4 | 26 | | X | 10 YR 5/4 Mod. Yellow Brown | Coarse to fine-grained sand 10% coarse grains (pebbles) sub-angular to rounded Max. size - 1 cm | | | Loose (Odor) | Moist | SP |
| 21.9 | 31 | | X | 10 YR 5/4 Mod. Yellow Brown | Coarse sand 5% coarse grain(pebbles) Max. size - 8 mm | | | Loose (Odor) | Moist | SP |
| 25.5 | 36 | | X | 10 YR 4/4 Mod. Yellow Brown | Coarse to medium-grained gravelly sand 10% coarse grains (pebbles), rounded Max. size - 1cm | | | Loose (Strong odor) | Moist | SP |
| 29 | 41 | | | | - Water Table - | | | | | |
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NOTE: SOIL COLOR CODE FOLLOWS THE STANDARD IN "ROCK COLOR CHART" PUBLISHED BY GSA.

McKESSON ENVIRONMENTAL SERVICES, INC.

PROJECT NO.: 7514 UD

LOGGED BY:
Larry Dudus

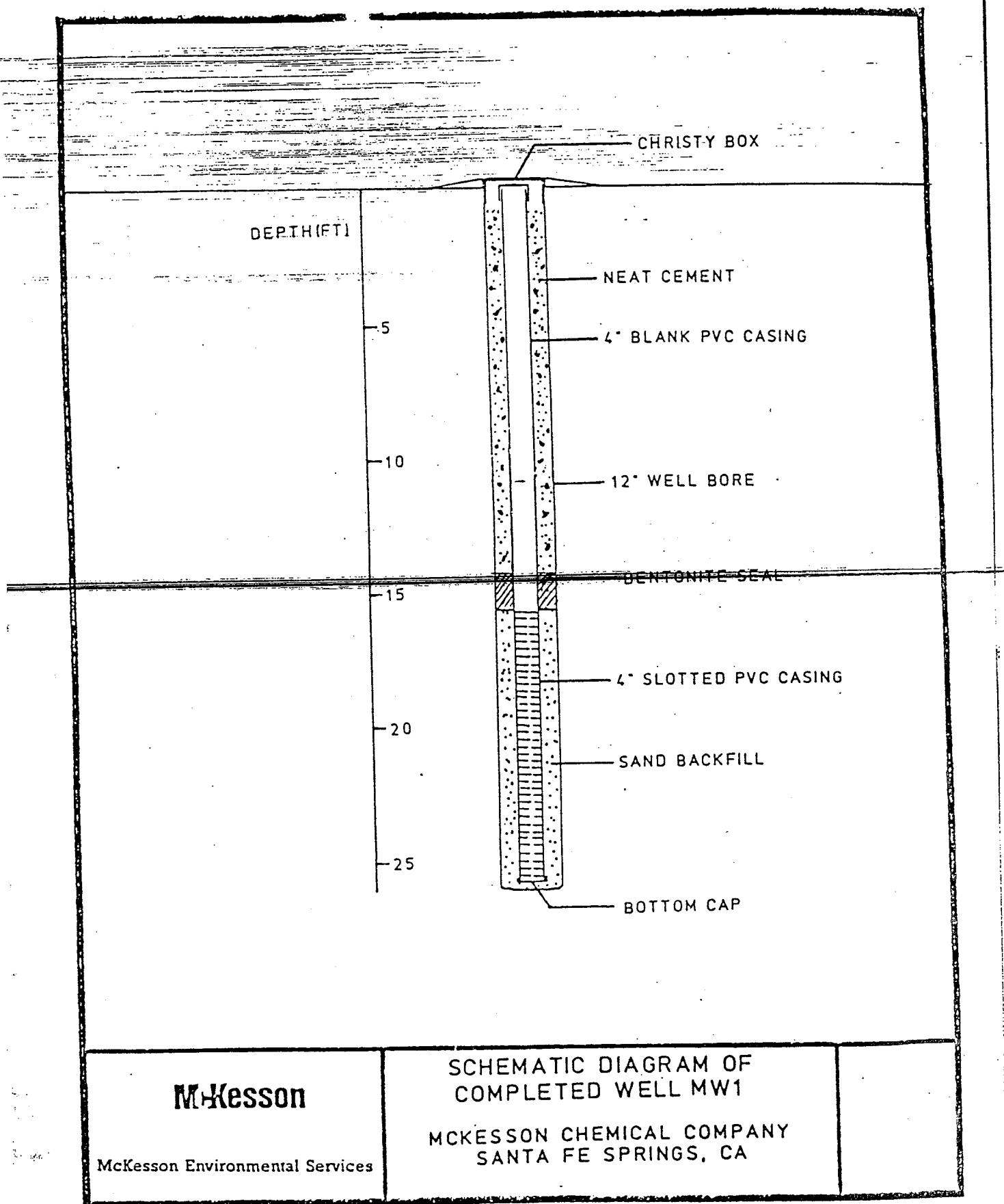
PROJECT NAME & LOCATION: McKesson Chemical - Santa Fe Springs

DATE: 3/21/86

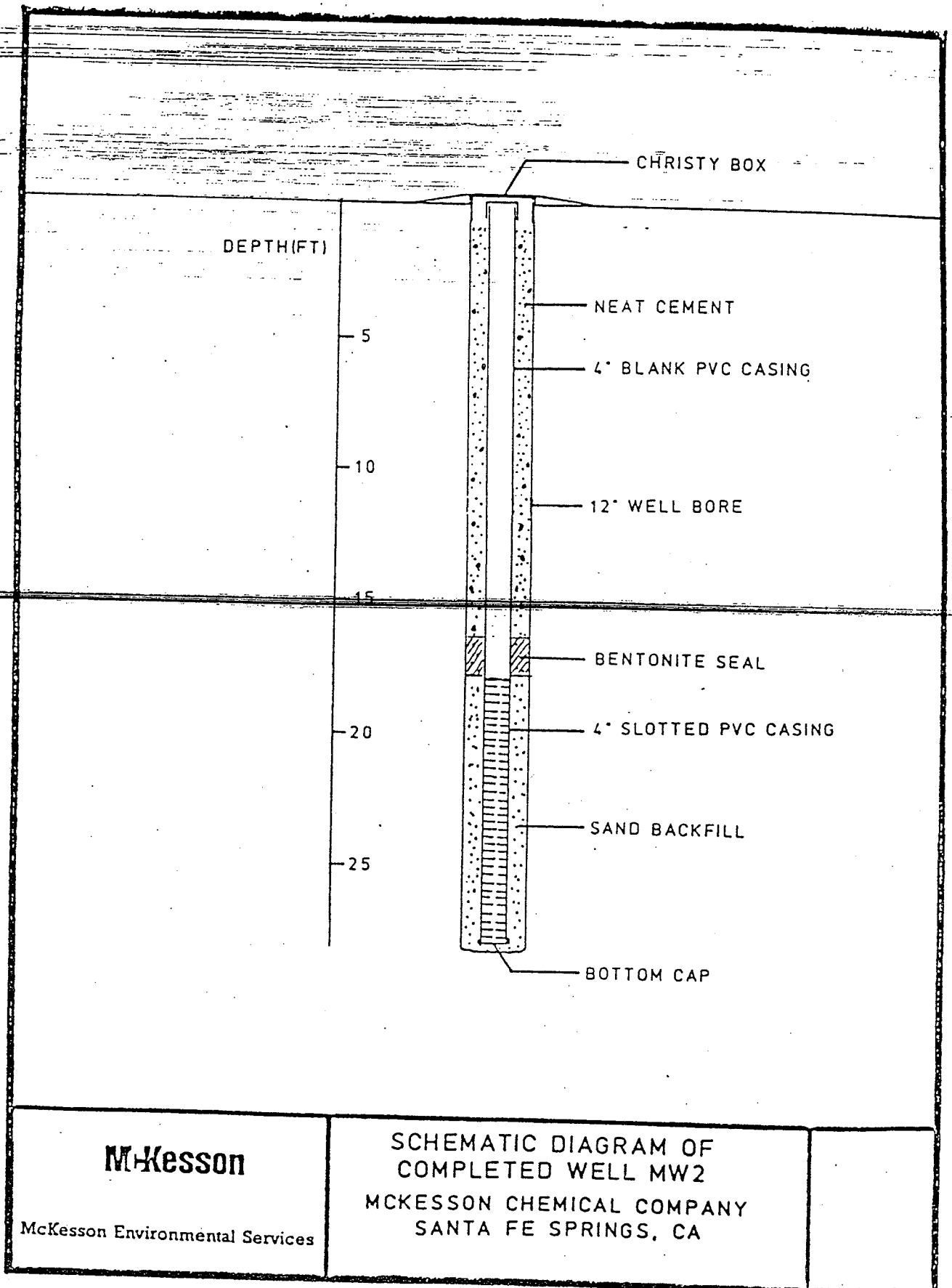
TITLE: Geologist

PAGE 2 OF 2

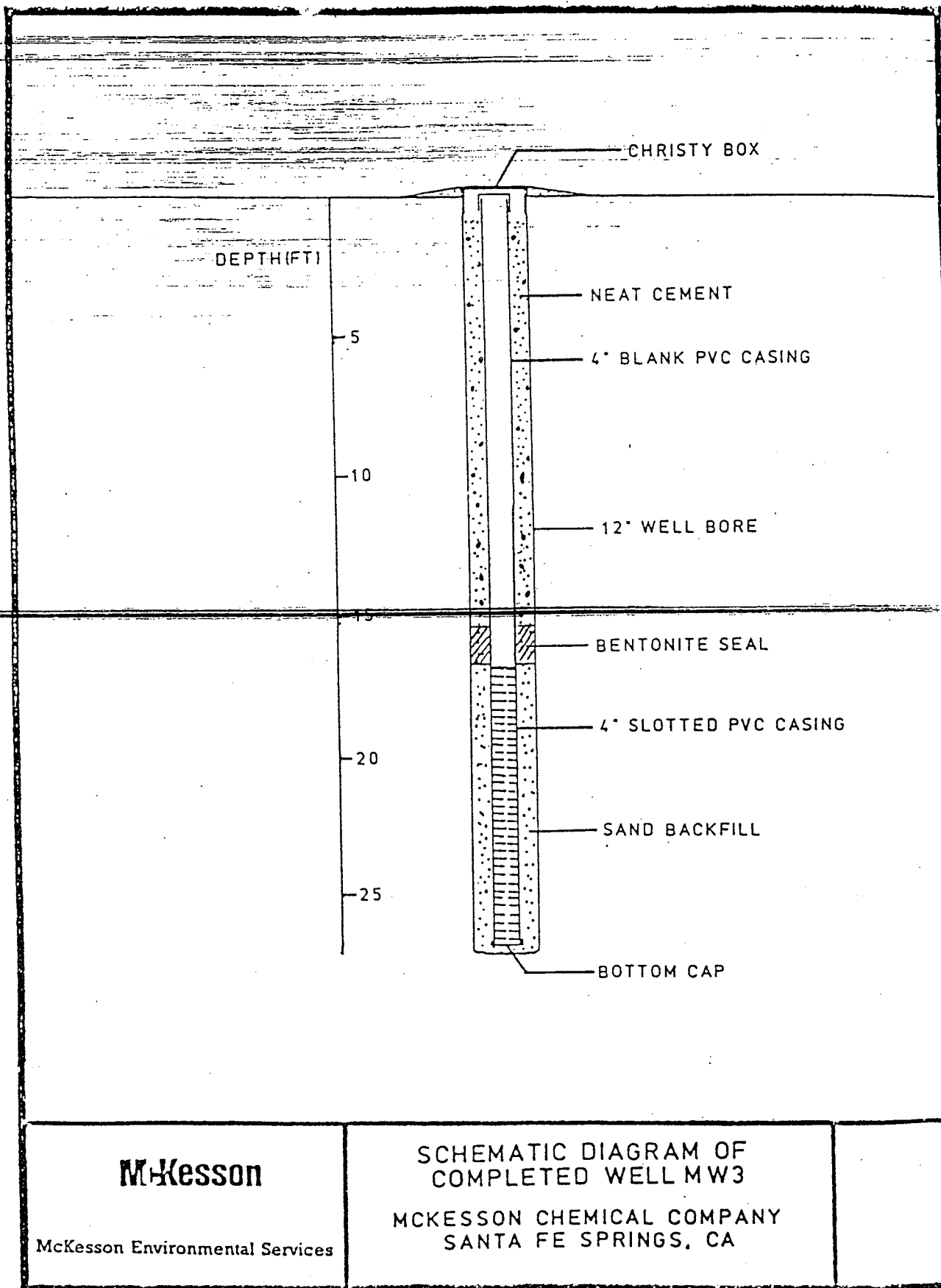
MCK0008070



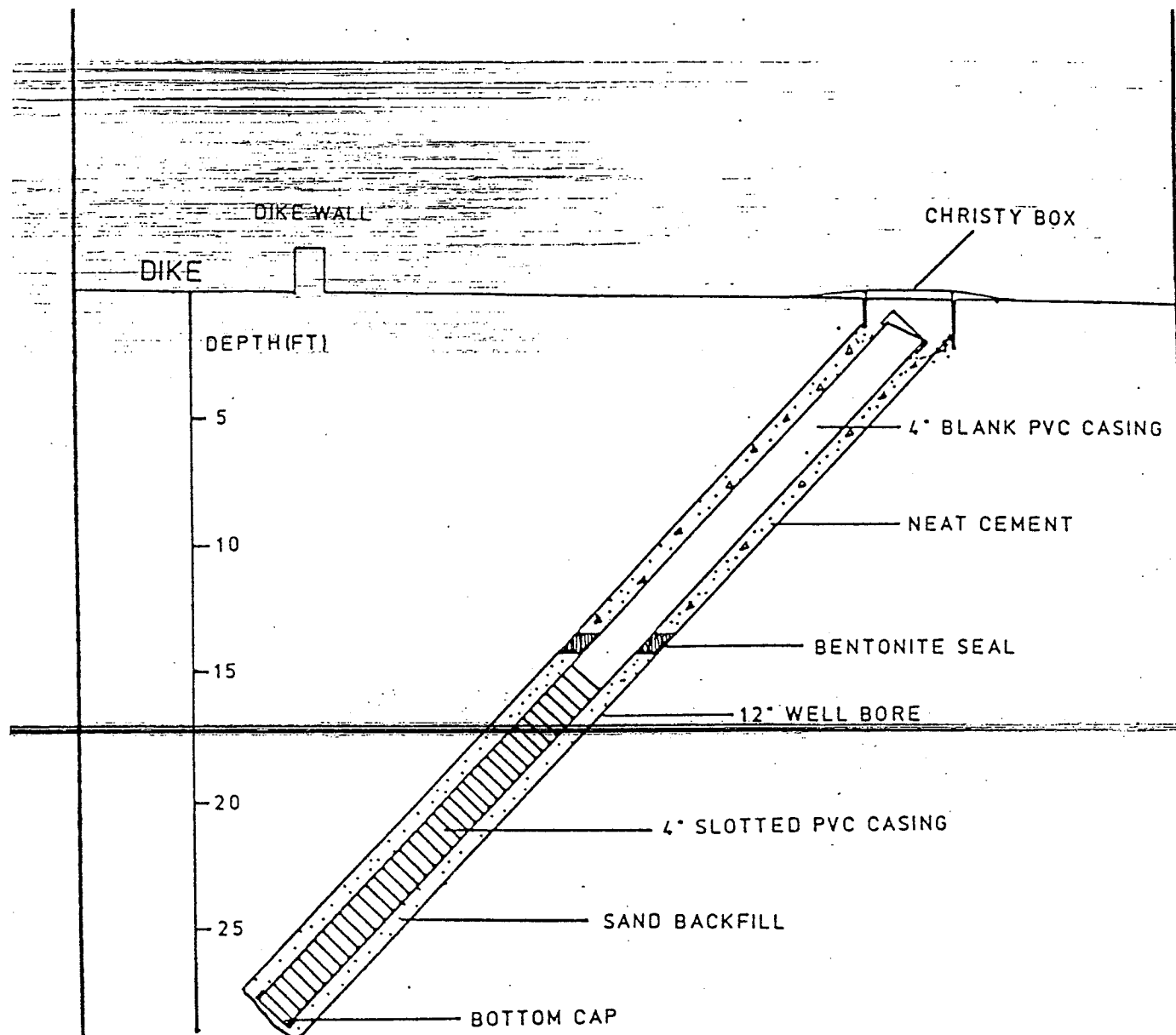
MCK0008071



MCK0008072



MCKC008073



| | | |
|---|--|---------------|
| <p>McKesson</p> <p>McKesson Environmental Services</p> | <p>SCHEMATIC DIAGRAM OF COMPLETED WELL MW4</p> <p>MCKESSON CHEMICAL COMPANY SANTA FE SPRINGS, CA</p> | <p>FIGURE</p> |
|---|--|---------------|

MCK0008074

Attachment B

Laboratory Analysis Results
of Soil and Water Samples

MCK0008075

RECEIVED

MAY - 8 1986

M-Kesson

Intra Company

Correspondence

To
Walter Loo

Date
May 1, 1986

From
Karen Bankert

Location Tel.
Environmental Services
426-2661

Subject
Analytical Results
Santa Fe Springs

Copies To

7520-QD

Attached are results for three (3) water and six (6) soil from two groups of samples received March 20 and 25, 1986. The samples were analyzed in the following way:

EPA 624/8240 for purgeable organic priority pollutants plus acetone, isopropanol, hexane, heptane; glycols and cellosolves by direct injection

EPA 610/8100 for total hydrocarbons - Mineral Spirits, Naphthalene, Stoddard Solvent, PX-2 and PX-3

EPA 8015 for methanol (water extraction for soil)

HPLC analysis for Sorbitol
EPA 8270 (1 Soil) extractable organics

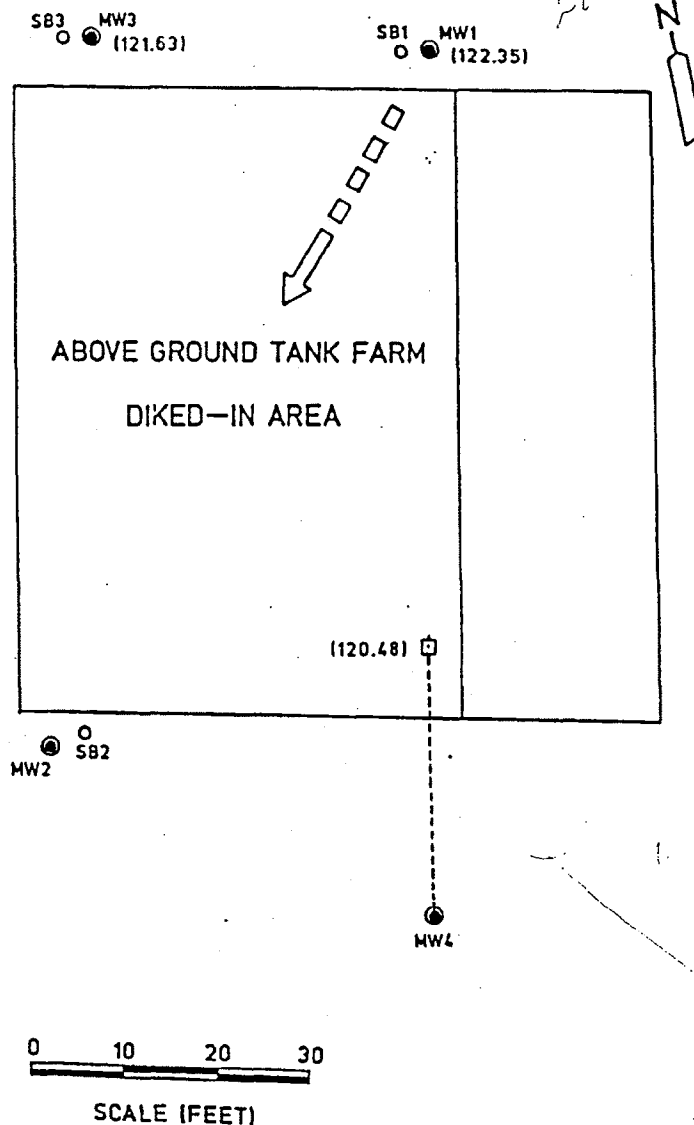
Results for mineral spirits, stoddard solvent, PX-2 and PX-3 are reported as Total Hydrocarbons. Because these chemicals are multi-component hydrocarbon mixtures, we are not able to identify them individually in these samples. It appears that "diesel" was found in one of the water samples.

If you have questions, please call.


KEB/pf
Attch.

SAMPLES NOT DESTROYED IN TESTING ARE RETAINED A MAXIMUM OF 30 DAYS
UNLESS OTHERWISE REQUESTED.

MCK0008076



LEGEND

- SLANT BORING
- GROUNDWATER MONITORING WELL AND ELEVATION
(121.63) OF GROUNDWATER LEVEL (IN FEET-MSL) - 4/9/86
- ↘ GROUNDWATER FLOW DIRECTION
- GROUNDWATER LEVEL ELEVATION (IN FEET-MSL)
(121.63) IN WELL MW4 - 4/9/86

ANALYSIS OF GROUNDWATER MOVEMENT

FIGURE 2

MCK0008077

McKESON ENVIRONMENTAL SERVICES

PRIORITY POLLUTANT ANALYSIS

7520-QD
Santa Fe Springs
McKesson Chemical

Lab Number: 8603123-18
Sample I.D.: MW-1
Date Received: 03-25-86
Date Analyzed: 04-15-86

Detection Limit Factor: 500

| <u>VOLATILES</u> | <u>CONCENTRATION</u> µg/L |
|--------------------------------|------------------------------|
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | 2,500 |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | 32,000 |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | ND |
| methylene chloride | 430,000 |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 110,000 |
| toluene | 18,000 |
| 1,1,1-trichloroethane | 880,000 |
| 1,1,2-trichloroethane | ND |
| trichloroethene | 4,500 |
| vinyl chloride | ND |

| <u>OTHER COMPOUNDS FOUND</u> | <u>CONCENTRATION</u> µg/L |
|------------------------------|------------------------------|
| freon 113 | 500 |
| acetone | 430,000 |
| isopropanol | 130,000 |
| methyl ethyl ketone | 210,000 |
| hexane | ND |
| heptane | ND |
| butyl cellosolve | 130,000 |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Gary Costley mck

Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MCK0008078

PRIORITY POLLUTANT ANALYSIS

Lab Number: 8603123-19
Sample I.D.: MW-3
Date Received: 03-25-86
Date Analyzed: 04-15-86

Detection Limit Factor: 500

| <u>VOLATILES</u> | <u>CONCENTRATION</u> µg/L |
|--------------------------------|------------------------------|
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | ND |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | 7,500 |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | ND |
| methylene chloride | 67,000 |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 22,000 |
| toluene | ND |
| 1,1,1-trichloroethane | 220,000 |
| 1,1,2-trichloroethane | ND |
| trichloroethene | 1,500 |
| vinyl chloride | ND |

| <u>OTHER COMPOUNDS FOUND</u> | <u>CONCENTRATION</u> µg/L |
|------------------------------|------------------------------|
| acetone | 23,000 |
| isopropanol | ND |
| methyl ethyl ketone | ND |
| hexane | ND |
| heptane | ND |
| butyl cellosolve | ND |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Gary Costley, M.S.
Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

PRIORITY POLLUTANT ANALYSIS

Lab Number: 8603123-20
 Sample I.D.: MW-4
 Date Received: 03-25-86
 Date Analyzed: 04-15-86

Detection Limit Factor: 500

| CONCENTRATION | | CONCENTRATION | |
|--------------------------------|---------|-----------------------|---------|
| VOLATILES | µg/L | OTHER COMPOUNDS FOUND | µg/L |
| benzene | ND | m-xylene | 2,000 |
| bromodichloromethane | ND | o-,p-xylenes | 1,000 |
| bromoform | ND | acetone | 160,000 |
| bromomethane | ND | isopropanol | ND |
| carbon tetrachloride | ND | methyl ethyl ketone | ND |
| chlorobenzene | ND | hexane | ND |
| chloroethane | ND | heptane | ND |
| 2-chloroethylvinyl ether | ND | butyl cellosolve | 270,000 |
| chloroform | ND | cellosolve acetate | ND |
| chloromethane | ND | ethylene glycol | ND |
| dibromochloromethane | ND | propylene glycol | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND | | |
| 1,3-dichlorobenzene | ND | | |
| 1,1-dichloroethane | 5,000 | | |
| 1,2-dichloroethane | 11,000 | | |
| 1,1-dichloroethene | 34,000 | | |
| trans-1,2-dichloroethene | ND | | |
| 1,2-dichloropropane | ND | | |
| cis-1,3-dichloropropene | ND | | |
| trans-1,3-dichloropropene | ND | | |
| ethyl benzene | ND | | |
| methylene chloride | 730,000 | | |
| 1,1,2,2-tetrachloroethane | ND | | |
| tetrachloroethene | 96,000 | | |
| toluene | 38,000 | | |
| 1,1,1-trichloroethane | 740,000 | | |
| 1,1,2-trichloroethane | ND | | |
| trichloroethene | 31,000 | | |
| vinyl chloride | ND | | |

Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MCK0008080

McKESSON ENVIRONMENTAL SERVICES

PRIORITY POLLUTANT ANALYSIS

7520-QD
Santa Fe Springs
McKesson Chemical

624 DETECTION LIMITS = Detection Limit Factor X Concentration

5ml Water Sample

| | CONCENTRATION |
|--------------------------------|---------------|
| VOLATILES | µg/L |
| benzene | 1 |
| bromodichloromethane | 1 |
| bromoform | 1 |
| bromomethane | 1 |
| carbon tetrachloride | 1 |
| chlorobenzene | 1 |
| chloroethane | 1 |
| 2-chloroethylvinyl ether | 1 |
| chloroform | 1 |
| chloromethane | 1 |
| dibromochloromethane | 1 |
| 1,2-and/or 1,4-dichlorobenzene | 3 |
| 1,3-dichlorobenzene | 2 |
| 1,1-dichloroethane | 1 |
| 1,2-dichloroethane | 1 |
| 1,1-dichloroethane | 1 |
| trans-1,2-dichloroethene | 1 |
| 1,2-dichloropropane | 1 |
| cis-1,3-dichloropropene | 1 |
| trans-1,3-dichloropropene | 1 |
| ethyl benzene | 2 |
| methylene chloride | 2 |
| 1,1,2,2-tetrachloroethane | 1 |
| tetrachloroethene | 1 |
| toluene | 1 |
| 1,1,1-trichloroethane | 1 |
| 1,1,2-trichloroethane | 1 |
| trichloroethene | 1 |
| vinyl chloride | 1 |

| | CONCENTRATION |
|-----------------------|---------------|
| OTHER COMPOUNDS FOUND | µg/L |
| Freon 113 | 1 |
| m-xylene | 1 |
| o-,p-xylene | 1 |
| acetone | 5 |
| isopropanol | 10 |
| methyl ethyl ketone | 5 |
| hexane | 1 |
| heptane | 1 |
| butyl cellosolve | 2,000 |
| cellosolve acetate | 3,000 |
| ethylene glycol | 125,000 |
| propylene glycol | 10,000 |

Gary Costley mab
Laboratory Supervisor

ND = Not Detected

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MCK0008081

PRIORITY POLLUTANT ANALYSIS

Lab Number: 8603103-01
Sample I.D.: SB1-S30
Date Received: 03-2-86
Date Analyzed: 04-21-86

Detection Limit Factor: 0.025

| <u>VOLATILES</u> | <u>CONCENTRATION</u> mg/kg |
|--------------------------------|-------------------------------|
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | 0.20 |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | ND |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | ND |
| methylene chloride | 4.3 |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 2.2 |
| toluene | 0.20 |
| 1,1,1-trichloroethane | 2.0 |
| 1,1,2-trichloroethane | ND |
| trichloroethene | 0.10 |
| vinyl chloride | ND |

| <u>OTHER COMPOUNDS FOUND</u> | <u>CONCENTRATION</u> mg/kg |
|------------------------------|-------------------------------|
| acetone | 200 |
| isopropanol | ND |
| methyl ethyl ketone | 130 |
| hexane | ND |
| heptane | ND |
| butyl cellosolve | 390 |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Darryl Costley
Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

ESSON ENVIRONMENTAL SERVICES
PRIORITY POLLUTANT ANALYSIS

7520-QD
Santa Fe Springs
McKesson Chemical

Lab Number: 8603103-06
Sample I.D.: SB1-S37
Date Received: 03-20-86
Date Analyzed: 04-21-86

Detection Limit Factor: 0.025

| | CONCENTRATION |
|--------------------------------|---------------|
| VOLATILES | mg/kg |
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | ND |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | ND |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | ND |
| methylene chloride | 1.8 |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 0.13 |
| toluene | ND |
| 1,1,1-trichloroethane | 0.08 |
| 1,1,2-trichloroethane | ND |
| trichloroethene | ND |
| vinyl chloride | ND |

| | CONCENTRATION |
|-----------------------|---------------|
| OTHER COMPOUNDS FOUND | mg/kg |
| acetone | 60 |
| isopropanol | ND |
| methyl ethyl ketone | 51 |
| hexane | ND |
| heptane | ND |
| butyl cellusolve | 87 |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Gary Costley mab
Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MCK0008083

McKESSON ENVIRONMENTAL SERVICES

PRIORITY POLLUTANT ANALYSIS

7520-QU
Santa Fe Springs
McKesson Chemical

Lab Number: 8603103-11
Sample I.D.: SB2-S35
Date Received: 03-20-86
Date Analyzed: 04-21-86

Detection Limit Factor: 0.025

| <u>VOLATILES</u> | <u>CONCENTRATION</u> mg/kg |
|--------------------------------|-------------------------------|
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | ND |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | ND |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | ND |
| methylene chloride | 2.2 |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 0.05 |
| toluene | ND |
| 1,1,1-trichloroethane | 0.03 |
| 1,1,2-trichloroethane | ND |
| trichloroethene | ND |
| vinyl chloride | ND |

| <u>OTHER COMPOUNDS FOUND</u> | <u>CONCENTRATION</u> mg/kg |
|------------------------------|-------------------------------|
| acetone | 2.7 |
| isopropanol | ND |
| methyl ethyl ketone | 2.0 |
| hexane | ND |
| heptane | ND |
| butyl cellosolve | ND |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Gary Costley M.B.
Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MCK0008084

PRIORITY POLLUTANT ANALYSIS

Lab Number: 8603103-15
Sample I.D.: SB3-S36
Date Received: 03-20-86
Date Analyzed: 04-21-86

Detection Limit Factor: 0.025

| <u>CONCENTRATION</u> | |
|--------------------------------|--------------|
| <u>VOLATILES</u> | <u>mg/kg</u> |
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | ND |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | ND |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | ND |
| methylene chloride | 3.5 |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 0.18 |
| toluene | ND |
| 1,1,1-trichloroethane | 1.1 |
| 1,1,2-trichloroethane | ND |
| trichloroethene | ND |
| vinyl chloride | ND |

| <u>CONCENTRATION</u> | |
|------------------------------|--------------|
| <u>OTHER COMPOUNDS FOUND</u> | <u>mg/kg</u> |
| acetone | 1.4 |
| isopropanol | ND |
| methyl ethyl ketone | ND |
| hexane | ND |
| heptane | ND |
| butyl cellosolve | ND |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Gary Costley mdb
Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

KESSON ENVIRONMENTAL SERVICES

PRIORITY POLLUTANT ANALYSIS

7520-QD
Santa Fe Springs
McKesson Chemical

Lab Number: 8603103-21
Sample I.D.: SBI-S25
Date Received: 03-20-86
Date Analyzed: 04-22-86

Detection Limit Factor: 0.025

| | <u>CONCENTRATION</u> |
|--------------------------------|----------------------|
| <u>VOLATILES</u> | <u>mg/kg</u> |
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | ND |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | 0.93 |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | 0.63 |
| methylene chloride | 0.20 |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 94 |
| toluene | 3.7 |
| 1,1,1-trichloroethane | 56 |
| 1,1,2-trichloroethane | ND |
| trichloroethene | 0.55 |
| vinyl chloride | ND |

| | <u>CONCENTRATION</u> |
|------------------------------|----------------------|
| <u>OTHER COMPOUNDS FOUND</u> | <u>mg/kg</u> |
| freon 113 | 0.78 |
| m-xylene | 1.8 |
| o-,p-xylenes | 0.9 |
| acetone | 2.3 |
| isopropanol | ND |
| methyl ethyl ketone | ND |
| hexane | ND |
| heptane | ND |
| butyl cellosolve | ND |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Gary Cotten
Laboratory Supervisor
ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MCK0008086

McKESSON ENVIRONMENTAL SERVICES
PRIORITY POLLUTANT ANALYSIS

7520-QD
Santa Fe Springs
McKesson Chemical

Lab Number: 8603123-05
Sample I.D.: OW2-25'
Date Received: 03-25-86
Date Analyzed: 04-22-86

Detection Limit Factor: 0.025

| <u>VOLATILES</u> | <u>CONCENTRATION</u> mg/kg |
|--------------------------------|-------------------------------|
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | ND |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | ND |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | ND |
| methylene chloride | ND |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 0.05 |
| toluene | ND |
| 1,1,1-trichloroethane | ND |
| 1,1,2-trichloroethane | ND |
| trichloroethene | ND |
| vinyl chloride | ND |

| <u>OTHER COMPOUNDS FOUND</u> | <u>CONCENTRATION</u> mg/kg |
|------------------------------|-------------------------------|
| acetone | 5.4 |
| isopropanol | ND |
| methyl ethyl ketone | ND |
| hexane | ND |
| heptane | ND |
| butyl cellosolve | ND |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Gary Costley m.e.s.
Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MCK0008087

McKESSON ENVIRONMENTAL SERVICES

PRIORITY POLLUTANT ANALYSIS

8240 DETECTION LIMITS = Detection Limit Factor X Concentration

| <u>CONCENTRATION</u> | | <u>CONCENTRATION</u> | |
|--------------------------------|--------------|------------------------------|--------------|
| <u>VOLATILES</u> | <u>mg/kg</u> | <u>OTHER COMPOUNDS FOUND</u> | <u>mg/kg</u> |
| benzene | 1 | Freon 113 | 1 |
| bromodichloromethane | 1 | m-xylene | 1 |
| bromoform | 1 | o-,p-xylene | 1 |
| bromomethane | 1 | acetone | 5 |
| carbon tetrachloride | 1 | isopropanol | 10 |
| chlorobenzene | 1 | methyl ethyl ketone | 5 |
| chloroethane | 1 | hexane | 1 |
| 2-chloroethylvinyl ether | 1 | heptane | 1 |
| chloroform | 1 | butyl cellosolve | 2000 |
| chloromethane | 1 | cellosolve acetate | 3000 |
| dibromochloromethane | 1 | ethylene glycol | 125,000 |
| 1,2-and/or 1,4-dichlorobenzene | 3 | propylene glycol | 10,000 |
| 1,3-dichlorobenzene | 2 | | |
| 1,1-dichloroethane | 1 | | |
| 1,2-dichloroethane | 1 | | |
| 1,1-dichloroethane | 1 | | |
| trans-1,2-dichloroethene | 1 | | |
| 1,2-dichloropropane | 1 | | |
| cis-1,3-dichloropropene | 1 | | |
| trans-1,3-dichloropropene | 1 | | |
| ethyl benzene | 2 | | |
| methylene chloride | 2 | | |
| 1,1,2,2-tetrachloroethane | 1 | | |
| tetrachloroethene | 1 | | |
| toluene | 1 | | |
| 1,1,1-trichloroethane | 1 | | |
| 1,1,2-trichloroethane | 1 | | |
| trichloroethene | 1 | | |
| vinyl chloride | 1 | | |

Gary Cutler
Laboratory Supervisor

ND = Not Detected

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MCK0008088

ANALYTICAL RESULTSSANTA FE SPRINGS

Date Received: 3-25-86

| | | |
|--------------|------------|------------|
| Lab No.: | 8603123-19 | 8603123-20 |
| Sample I.D.: | MW-3 | MW-4 |

Concentration in µg/L

| | | |
|---|-----|-------|
| Total Hydrocarbons * (low to medium boiling point range) | 51 | 7,000 |
| Total Hydrocarbons as Diesel | 250 | ND |
| Naphthalene | ND | 240 |

ND = Not Detected

Detection Limits: Low to Medium Boiling Point Range: 50 µg/L
Diesel: 100 µg/L
Naphthalene: 10 µg/L

* - Includes PX-2, PX-3, Mineral Spirits, Stoddard Solvent, and gasoline

Michael Larson mls
Laboratory Supervisor

MCK0008089

McKESSON ENVIRONMENTAL SERVICES

7520-QD
McKESSON CHEMICAL

ANALYTICAL RESULTS

SANTA FE SPRINGS

Date Received: 3-20 and 3-25-86

| | | | | | | |
|--------------|------------|------------|------------|------------|------------|------------|
| Lab No.: | 8603103-01 | 8603103-06 | 8603103-11 | 8603103-15 | 8603103-21 | 8603123-05 |
| Sample I.D.: | SB1 S30 | SB1 S37 | SB2 S35 | SB3 S36 | SB1 S25 | OW-2 |

Concentration in mg/kg

| | | | | | | |
|---|-----|----|----|----|----|----|
| Total Hydrocarbons * (low to medium boiling point range) | 37 | ND | ND | ND | 14 | ND |
| Total Hydrocarbons as Diesel | ND | ND | ND | ND | ND | ND |
| Naphthalene | 0.2 | ND | ND | ND | ND | ND |

ND = Not Detected

Detection Limits: Low to Medium Boiling Point Range: 1 ppm
Diesel: 2 ppm
Naphthalene: 0.2 ppm

* - Includes PX-2, PX-3, Mineral Spirits, Stoddard Solvent, and gasoline

Michael Larson mds
Laboratory Supervisor

MCK0008090

McKESSON ENVIRONMENTAL SERVICES

7520-QD
McKESSON CHEMICAL

ANALYTICAL RESULTS

SANTA FE SPRINGS

Date Received: MES Batch 8603103, 3-20-86
MES Batch 8603123, 3-25-86

| | | | | | | |
|--------------|------------|------------|------------|------------|------------|------------|
| Lab No.: | 8603103-01 | 8603103-06 | 8603103-11 | 8603103-15 | 8603103-21 | 8603103-05 |
| Sample I.D.: | SB1-S30 | SB1-S37 | SB2-S35 | SB3-S36 | SB1-S25 | OW2-25' |

PARAMETER

Concentration in mg/kg

| | | | | | | |
|----------|----|---|---|---|---|----|
| Methanol | 11 | 5 | 9 | 8 | 2 | ND |
|----------|----|---|---|---|---|----|

ND = Not Detected

Detection Limits = 1 ppm

Michael Larson mds
Laboratory Supervisor

MCK0008091

McKESSON ENVIRONMENTAL SERVICES

7520-QD
McKESSON CHEMICAL

ANALYTICAL RESULTS

SANTA FE SPRINGS

Date Received: 03-25-86

| | | |
|--------------|------------|------------|
| Lab No.: | 8603123-19 | 8603123-20 |
| Sample I.D.: | MW-3 | MW-4 |

| <u>PARAMETER</u> | <u>CONCENTRATION IN MG/L</u> | |
|------------------|------------------------------|----|
| Sorbitol | ND | ND |

ND = Not Detected

Detection Limits = 100 ppm

Michael Larson mLB
Laboratory Supervisor

MCK0008092

McKESSON ENVIRONMENTAL SERVICES

7520-QD
McKESSON CHEMICAL

ANALYTICAL RESULTS

SANTA FE SPRINGS

Date Received: MES Batch 8603103, 03-20-86
MES Batch 8603123, 03-25-86

| | | | | | |
|--------------|------------|------------|------------|------------|------------|
| Lab No.: | 8603103-06 | 8603103-11 | 8603103-15 | 8603103-21 | 8603103-05 |
| Sample I.D.: | SB1-S37 | SB2-S35 | SB3-S36 | SB1-S25 | OW2-S25' |

PARAMETER

CONCENTRATION IN mg/kg

| | | | | | |
|----------|----|----|----|----|----|
| Sorbitol | ND | ND | ND | ND | ND |
|----------|----|----|----|----|----|

ND = Not Detected

Detection Limits = 100 ppm

Michael Larson mcb
Laboratory Supervisor

MCK0008093

McKESSON ENVIRONMENTAL SERVICES

PRIORITY POLLUTANT ANALYSIS

7520-QD
SANTA FE SPRINGS
McKESSON CHEMICAL

Lab Number: 8603103-01
Sample I.D.: SBI-S30
Date Received: 03-20-86
Date Analyzed: 04-23-86

Detection Limit Factor = 0.2

| ACID COMPOUNDS | mg/kg | BASE/NEUTRAL COMPOUNDS | mg/kg |
|--|-------|-----------------------------------|-------|
| 21A 2,4,6-trichlorophenol | ND | 41B 4-bromophenyl phenyl ether | ND |
| 22A p-chloro-m-cresol | ND | 42B bis-(2-chloroisopropyl) ether | ND |
| 24A 2-chlorophenol | ND | 43B bis-(2-chloroethoxy) methane | ND |
| 31A 2,4-dichlorophenol | ND | 52B hexachlorobutadiene | ND |
| 34A 2,4-dimethylphenol | ND | 53B hexachlorocyclopentadiene | ND |
| 57A 2-nitrophenol | ND | 54B isophorone | ND |
| 58A 4-nitrophenol | ND | 55B naphthalene | 0.2 |
| 59A 2,4-dinitrophenol | ND | 56B nitrobenzene | ND |
| 60A 4,6-dinitro-o-cresol | ND | 61B N-nitrosodimethylamine | ND |
| 64A pentachlorophenol | ND | 62B N-nitrosodiphenylamine | ND |
| 65A phenol | ND | 63B N-nitrosodi-n-propylamine | ND |
| | | 66B bis-(2-ethylhexyl) phthalate | ND |
| | | 67B butyl benzyl phthalate | ND |
| | | 68B di-n-butyl phthalate | ND |
| | | 69B di-n-octyl phthalate | ND |
| | | 70B diethyl phthalate | ND |
| | | 71B dimethyl phthalate | ND |
| | | 72B benzo(a)anthracene | ND |
| | | 73B benzo(a)pyrene | ND |
| | | 74B 3,4-benzofluoranthene | ND |
| | | 75B benzo(k)fluoranthene | ND |
| | | 76B chrysene | ND |
| | | 77B acenaphthylene | ND |
| | | 78B anthracene | ND |
| | | 79B benzo(ghi)perylene | ND |
| | | 80B fluorene | ND |
| | | 81B phenanthrene | ND |
| | | 82B dibenzo(a,h)anthracene | ND |
| | | 83B indeno(1,2,3-cd)pyrene | ND |
| | | 84B pyrene | ND |
| BASE/NEUTRAL COMPOUNDS | | | |
| 1B acenaphthene | ND | | |
| 2B benzidine | ND | | |
| 3B 1,2,4-trichlorobenzene | ND | | |
| 9B hexachlorobenzene | ND | | |
| 12B hexachloroethane | ND | | |
| 18B bis(2-chloroethyl)ether | ND | | |
| 20B 2-chloronaphthalene | ND | | |
| 25B 1,2-dichlorobenzene | ND | | |
| 26B 1,3-dichlorobenzene | ND | | |
| 27B 1,4-dichlorobenzene | ND | | |
| 28B 3,3'-dichlorobenzidine | ND | | |
| 35B 2,4-dinitrotoluene | ND | | |
| 36B 2,6-dinitrotoluene | ND | | |
| 37B 1,2-diphenylhydrazine (azobenzene) | ND | | |
| 39B fluoranthene | ND | | |
| 40B 4-chlorophenyl phenyl ether | ND | | |

Gary Costley m03
Laboratory Supervisor

ND = Not Detected
* = Compound detected; concentration below level for accurate quantitation.

MCK0008094

7520-QD
SANTA FE SPRINGS
McKESSON CHEMICAL

Tentative Identification of Non-Priority Pollutants

Sample I.D. SB1-S30

| | | |
|-----|--|----|
| 243 | Unknown | 78 |
| 325 | 1-(2-Methoxy-1-Methylethoxy)-2-Propanol | 10 |
| 329 | 1-(2--Methoxy-1-Methylethoxy)-2-Propanol | 10 |
| 476 | 2-(2-Butoxyethoxy)-Ethanol | 44 |
| 503 | 2-Phenoxy Ethanol | 49 |

MCK0008095

McKESSON ENVIRONMENTAL SERVICES

PRIORITY POLLUTANT ANALYSIS

8270 DETECTION LIMITS = Detection Limit Factor X Concentration

| ACID COMPOUNDS | | mg/kg | BASE/NEUTRAL COMPOUNDS | | mg/kg |
|------------------------|-----------------------------------|-------|------------------------|-------------------------------|-------|
| 21A | 2,4,6-trichlorophenol | 1 | 41B | 4-bromophenyl phenyl ether | 1 |
| 22A | p-chloro-m-cresol | 1 | 42B | bis-(2-chloroisopropyl) ether | 1 |
| 24A | 2-chlorophenol | 1 | 43B | bis-(2-chloroethoxy) methane | 1 |
| 31A | 2,4-dichlorophenol | 1 | 52B | hexachlorobutadiene | 1 |
| 34A | 2,4-dimethylphenol | 1 | 53B | hexachlorocyclopentadiene | 1 |
| 57A | 2-nitrophenol | 1 | 54B | isophorone | 1 |
| 58A | 4-nitrophenol | 1 | 55B | naphthalene | 1 |
| 59A | 2,4-dinitrophenol | 5 | 56B | nitrobenzene | 1 |
| 60A | 4,6-dinitro-o-cresol | 1 | 61B | N-nitrosodimethylamine | 5 |
| 64A | pentachlorophenol | 1 | 62B | N-nitrosodiphenylamine | 1 |
| 65A | phenol | 1 | 63B | N-nitrosodi-n-propylamine | 1 |
| | | | 66B | bis-(2-ethylhexyl) phthalate | 9 |
| | | | 67B | butyl benzyl phthalate | 1 |
| | | | 68B | di-n-butyl phthalate | 1 |
| | | | 69B | di-n-octyl phthalate | 1 |
| | | | 70B | diethyl phthalate | 1 |
| | | | 71B | dimethyl phthalate | 8 |
| | | | 72B | benzo(a)anthracene | 1 |
| | | | 73B | benzo(a)pyrene | 1 |
| | | | 74B | 3,4-benzofluoranthene | 2 |
| | | | 75B | benzo(k)fluoranthene | 2 |
| | | | 76B | chrysene | 2 |
| | | | 77B | acenaphthylene | 1 |
| | | | 78B | anthracene | 1 |
| | | | 79B | benzo(ghi)perylene | 1 |
| | | | 80B | fluorene | 1 |
| | | | 81B | phenanthrene | 1 |
| | | | 82B | dibenzo(a,h)anthracene | 1 |
| | | | 83B | indeno(1,2,3-cd)pyrene | 1 |
| | | | 84B | pyrene | 1 |
| BASE/NEUTRAL COMPOUNDS | | | | | |
| 1B | acenaphthene | 1 | | | |
| 5B | benzidine | 27 | | | |
| 8B | 1,2,4-trichlorobenzene | 1 | | | |
| 9B | hexachlorobenzene | 1 | | | |
| 12B | hexachloroethane | 1 | | | |
| 18B | bis(2-chloroethyl)ether | 1 | | | |
| 20B | 2-chloronaphthalene | 1 | | | |
| 25B | 1,2-dichlorobenzene | 1 | | | |
| 26B | 1,3-dichlorobenzene | 1 | | | |
| 27B | 1,4-dichlorobenzene | 1 | | | |
| 28B | 3,3'-dichlorobenzidine | 38 | | | |
| 35B | 2,4-dinitrotoluene | 1 | | | |
| 36B | 2,6-dinitrotoluene | 1 | | | |
| 37B | 1,2-diphenylhydrazine(azobenzene) | 3 | | | |
| 39B | fluoranthene | 1 | | | |
| 40B | 4-chlorophenyl phenyl ether | 1 | | | |

Mr. Gary Costley
Laboratory Supervisor

MCK0008096

McKESSON ENVIRONMENTAL SERVICES

7520-QD
Santa Fe Springs

SURROGATE RECOVERY

VOA FRACTION

Date: 04/15/86

| Lab No. | Sample I.D. | Benzene-d ₆ | Toluene-d ₈ | Ethyl Benzene-d ₁₀ | Bromofluoro- Benzene |
|------------|-------------|------------------------|------------------------|----------------------------------|-------------------------|
| 8603123-18 | MW-1 | 113 | 139 | 128 | 146 |
| 8603123-19 | MW-3 | 114 | 145 | 139 | 158 |
| 8603123-20 | MW-4 | 114 | 134 | 123 | 144 |
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Gary Costley
Laboratory Supervisor

MCK0008097

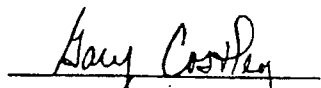
McKESSON ENVIRONMENTAL SERVICES

SURROGATE RECOVERY

VOA FRACTION

Date: 04-21 - 04-22-86

| Lab No. | Sample I.D. | Benzene-d ₆ | Toluene-d ₈ | Ethyl Benzene-d ₁₀ | Bromofluoro- Benzene |
|-------------|-------------|------------------------|------------------------|----------------------------------|-------------------------|
| VBM 4/21/86 | | 97 | 100 | 100 | 100 |
| 8603103-01 | SB1-S33-5 | 94 | 822 | 80 | 87 |
| 8603103-06 | SB1-S37 | 92 | 78 | 78 | 85 |
| 8603103-11 | SB2-S35 | 90 | 78 | 77 | 87 |
| 8603103-15 | SB3-S36 | 92 | 79 | 76 | 85 |
| 8603103-21 | SB1-S25 | 79 | 80 | 80 | 98 |
| VBM 4/22/86 | | 127 | 161 | 180 | 153 |
| 8603123-05 | OW2-25' | 129 | 159 | 176 | 151 |


Laboratory Supervisor

MCK0008098

McKESSON ENVIRONMENTAL SERVICES

7520-QD
McKESSON CHEMICAL

M.E.S. No. 8603103-11
Sample I.D. SB2-S35
Date Received 03-20-86
MATRIX SOIL

MATRIX SPIKE RECOVERY

SANTA FE SPRINGS

Units of Concentration (circle), $\mu\text{g/kg}$ $\mu\text{g/L}$ mg/kg mg/L

| FRACTION | COMPOUND | CONC. OF MATRIX | CONC. OF SPIKE ADDED | CONC. OF SPIKE RECOV. | % RECOVERY | COMMENTS |
|----------|----------|--------------------|----------------------------|-----------------------------|---------------|----------|
| | Sorbitol | ND | 700 | 579 | 83 | |
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Gary Costley
Laboratory Supervisor

10/84

MCK0008099

Attachment 4

To
Carl Piercy

Date
July 5, 1984

From
Paul Marshall

Location: Tel.
Environmental
Services/Dublin

McKesson
Intra Company
Correspondence

Subject
June Status Report
Santa Fe Springs Soil
Sampling

Copies To
Bob Carlson

7154-QD (2)

On Wednesday June 27, I traveled to the McKesson Chemical Santa Fe Springs Bulk Distribution Center in the Los Angeles Area. The purpose of the trip was to sample the solvent tank storage area as described in Carl Piercy's 25 June memo.

Soil Sampling Description

I arrived at the site about 10 am and met the Laboratory Chemist and Assistant Manager. Equipment had been delivered intact. I reviewed the plans with the personnel assigned to assist with the sampling.

My assessment of the diked area ruled out sampling in the Northeast corner, my plot drawing boring No. 1. There was a considerable volume of solvent in the gravel covering of the clay natural soil. I estimate an area 10' x 20' about 6 inches deep. Since this free liquid would flow down the boring, I recommended a delay in sampling that location until the liquid could be removed. I agreed to and have shipped by UPS sample containers for sampling and returning the liquid for analysis by MES laboratory.

Soil samples were collected at locations No. 2, 3, and 4 at the (1) foot depth, then drilled to about 2.5 feet with the auger at each location, and sampled at the 3 feet depth. The sequence was repeated for samples at 6 feet depth. Fouled threads prevented use of the Veihmeyer soil sampler at the 6 feet depth, instead an available piece of pipe was used with success.

In addition to the diked area, a soil sample was collected at the edge of a drainage ditch just north of the dike, and McKesson fence. The sample depth was 3 feet and approximately 7 feet below grade of the diked area.

The samples were packaged in the insulated cooler with "blue ice" and hand carried on my return flight. The samples were refrigerated overnight and logged in at MES the next morning. A volatile organics analysis (VOA) by GC/MS was requested.

I will provide a report as soon as analytical results are available, 2 to 3 weeks. Expenditures for the month of June include \$120 Analytical and \$1,610 Engineering for a total of \$1,730.

PM
Paul Marshall

PM/bh

MK070400

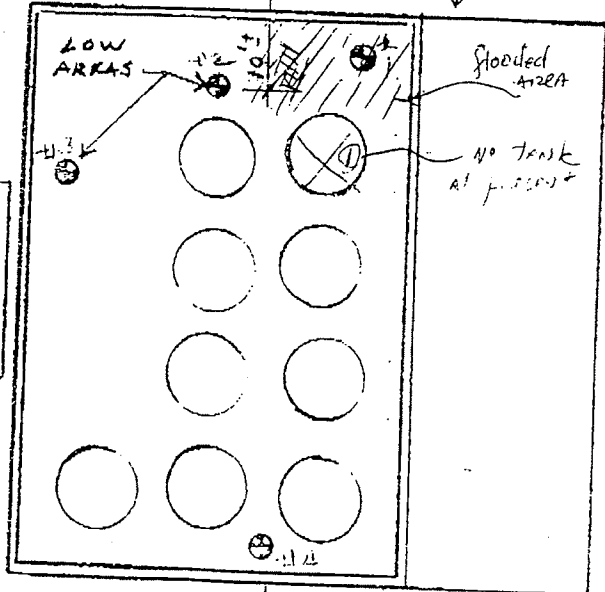
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YARD
OFFICE



FILL
SHELTER

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|------------------------------|--|--|--|---------------------------|--|
| SOIL SAMPLING - SOLVENT DIKE | | | | Sht. 1 of 1 | |
| Rev. A | | | | M-Kesson SANTA FE SPRINGS | |
| C/26/84 | | | | PEC. NO. : | |

MK070401

Attachment 5

McKesson

7154-QD


GC/MS ANALYSIS
SANTA FE SPRINGS

- methyl glycol
- ethylene glycol

Lab No.: 15265
Sample I.D.: Dike Surface Liquid
Date Received: 07/20/84
Date Analyzed: 08/22/84

| <u>Common Name</u> | <u>Chemical Compound</u> | <u>Concentration in µg/ml (ppm)</u> |
|-------------------------|----------------------------------|---|
| Butyl Cellosolve | 2-Butoxy Ethanol | 2,700 |
| Hexylene Glycol | 2-Methyl-2,4-pentanediol | 1,100 |
| Diethylene Glycol | Oxybis Ethanol | 11,000 |
| Butyl Carbitol | Butoxyethoxy Ethanol | 9,400 |
| 7 Phenyl Cellosolve | 2-Phenoxy Ethanol | 2,300 |
| | [Ethanediyl bis(oxy)]bis-ethanol | 23,000 |
| Methyl Carbitol Acetate | Methoxyethoxy Ethanol Acetate | 110 |
| 7 Phenyl Carbitol | Phenoxyethoxy Ethanol | 1,500 |

Unknowns were detected at scan numbers of 338, 360 and 461 with a total concentration estimated to be 2,400 ppm.


N. W. Flynn, Laboratory Manager

CERTIFICATION OF REPRESENTATIVE SAMPLE OR SAMPLE INTEGRITY IS NOT MADE BY
McKESSON ENVIRONMENTAL SERVICES (MES) FOR SAMPLES NOT TAKEN BY MES.

MKDD0386

MKIL11116

Attachment 6

**Table 2. McKesson Environmental Data
October 1984**

| | | Soil | | | | |
|-------------------------------------|------------------|-----------------------|------------------|--------------------|------------------|--|
| | | Concentration (mg/kg) | | | | |
| <u>Sample No.</u> Depth (inches) | <u>1A</u> 0-6 | <u>1B</u> 12-18 | <u>2A</u> 0-6 | <u>2B</u> 12-18 | <u>3A</u> 0-6 | |
| <u>Pesticides</u> | | | | | | |
| Y-BHC | (0.26) | (0.26) | (0.26) | (0.26) | (0.26) | |
| Endrin | (0.26) | (0.26) | (0.26) | 0.26 | (0.26) | |
| 2,4-D | (0.05) | (0.05) | (0.05) | (0.05) | (0.05) | |
| 2,4,5-TP | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) | |
| Toxaphene | (12) | (12) | (12) | (12) | (12) | |
| <u>Metal</u> | | | | | | |
| Arsenic | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | |
| Barium | (0.5) | (0.5) | (0.5) | (0.5) | (0.5) | |
| Cadmium | (0.02) | (0.02) | (0.02) | (0.02) | (0.5) | |
| Chromium | (0.1) | (0.1) | (0.1) | (0.1) | (0.1) | |
| Lead | (0.5) | (0.5) | (0.5) | (0.5) | (0.5) | |
| Mercury | (0.004) | (0.004) | (0.004) | (0.004) | (0.004) | |
| Selenium | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) | |
| Silver | (0.05) | (0.05) | (0.05) | (0.05) | (0.05) | |

Notes:

Samples collected from corrosive storage area
 Samples analyzed for EP toxic compounds
 mg/kg = milligrams per kilogram
 () indicates not detected below enclosed detection limit
 Data source: McKesson Corporation (1984b)

Attachment 7

McKesson Chemical Group

OCT 31 1984

Western Region

McKesson

October 25, 1984

Mr. Jim Smith
California Department of Health Services
Toxic Substances Control Division
Southern California Section
107 S. Broadway, Room 7128
Los Angeles, California 90012

TD-85142

RE: EPA #CAD 060395753

Dear Mr. Smith:

In your letter of October 5, 1984 you requested a number of items from us. These included our immediate clean up of surface and subsurface contamination to the levels specified in the California Assessment Manual (CAM), a site investigation plan, and information on spill incidents and the now removed storage tank.

The standing liquid Ms. Robinson noted in her April 13, 1984 report has been removed. The liquid was a mixture of rainwater, glycols, and glycol ethers, none of which is a CAM identified compound. The results of our analysis of this liquid are summarized in Table I.

When Mr. Landry and I met with Ms. Robinson on October 3, 1984 we advised her that we had already sampled the soil in the solvent dike area but that the results were not yet available. These samples were collected at the 1, 3, and 6 foot depths in each location using a Veihmeyer soil sampler, auger, or pipe as appropriate. All samples were collected, stored, and transported according to EPA-recommended protocol. The location of each soil boring is shown on Figure 1.

The soil samples were analyzed by McKesson Environmental Services, a laboratory certified by DOHS for these analyses. The only CAM identified compound detected was trichloroethylene, and its concentration was only about 14% of the CAM STLC limit. The actual trichloroethylene concentrations are summarized in Table II.

MR. JIM SMITH
OCTOBER 25, 1984
PAGE TWO
TD-85142

The results presented in Table II and our knowledge that the other CAM compounds are not handled at this facility indicate to us that further investigation and extensive excavation are unwarranted. However, we do plan to place a concrete floor in this storage area. We propose to remove and properly dispose of the upper 12-18 inches of soil and lay a concrete floor. We trust this plan meets with your approval.

Concerning the spill incidents, there has been only one significant incident since the plant was built 10 years ago. In 1979 we released approximately 10,000 gal of sulfuric acid due to a faulty valve. This acid was entirely contained within the corrosive dike and the release was reported as required to the US Coast Guard. We recovered approximately 7000 gal by vacuum, diluted the balance with water, and pumped the more dilute solution to the on-site neutralization pit where it was neutralized. We then twice flooded the soil with a soda ash slurry and pumped that mixture to the neutralization pit. Finally, we replaced the upper 24 inches of soil with virgin fill and rock.

Ms. Robinson also asked about the circumstances surrounding the removal of one storage tank from the solvent storage diked area. This tank contained 37% formaldehyde. In 1982 we moved this tank into the corrosive diked area merely for reasons of chemical compatibility. The tank was not leaking at that time and indeed, is still in service.

We trust this information is satisfactory. Mr. Landry and I would be happy to meet with you and Ms. Robinson to answer any further questions you may have.

Sincerely,



Douglas L. Eisner
Technical Director

DLE:da

cc: L. D. Landry

MCK0010044

TABLE I. ANALYSIS OF STANDING LIQUID

| <u>CHEMICAL COMPOUND</u> | <u>COMMON NAME</u> | <u>CONCENTRATION,</u> <u>ppm</u> |
|------------------------------------|-------------------------|-------------------------------------|
| 2-Butoxy Ethanol | Butyl Cellosolve | 2,700 |
| 2-Methyl-2,4-pentanediol | Hexylene Glycol | 1,100 |
| Oxybis Ethanol | Diethylene Glycol | 11,000 |
| Butoxyethoxy Ethanol | Butyl Carbitol | 9,400 |
| 2-Phenoxy Ethanol | None | 2,300 |
| [[Ethanediyl bis(oxy)]]bis-ethanol | None | 23,000 |
| Methoxyethoxy Ethanol Acetate | Methyl Carbitol Acetate | 110 |
| Phenoxyethoxy Ethanol | None | 1,500 |

Unknowns were detected at scan numbers of 338, 360 and 461 with a total concentration estimated to be 2,400 ppm.

TABLE II. TRICHLOROETHYLENE CONCENTRATIONS

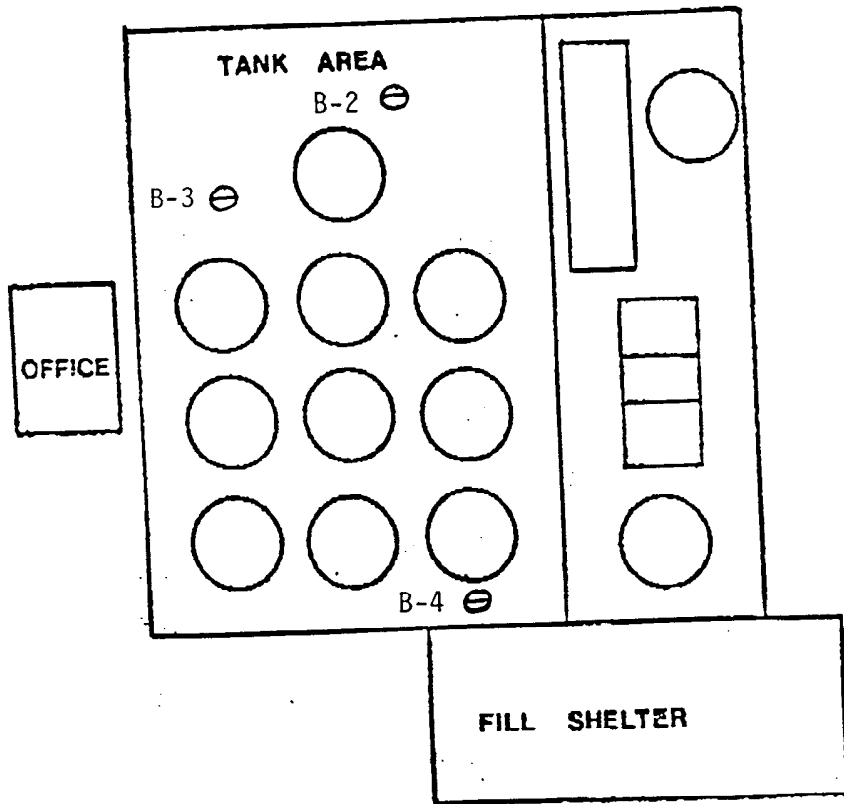
TRICHLOROETHYLENE CONCENTRATION, ppm

| BORING 2 | | | BORING 3 | | | BORING 4 | | | BORING 5 |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <u>1 ft</u> | <u>3 ft</u> | <u>6 ft</u> | <u>1 ft</u> | <u>3 ft</u> | <u>6 ft</u> | <u>1 ft</u> | <u>3 ft</u> | <u>6 ft</u> | <u>3 ft</u> |
| nd | 4.0 | 0.03 | nd | nd | 0.07 | nd | 33.0 | nd | 0.008 |

"nd" means not detected above a detection limit of 0.100 - 1.00ppm

RAILROAD SPUR

GENERAL REGIONAL
GROUNDWATER FLOW



LEGEND

⊗ BORING

NOT TO SCALE

Figure 1. McKesson Chemical Company Site Plan

Attachment 8

McKesson Chemical Co

DEC 10 1984

Western Region

McKesson

6 December 1984

Ms. Megan Robinson
California Department of Health Services
Toxic Substances Control Division
107 S. Broadway, Room 7128
Los Angeles, CA 90012

TD 85171

re: Santa Fe Springs Facility
EPA CAD060395753

Dear Ms. Robinson:

You requested we perform EP Toxicity tests on the soil within the corrosive dike area at this facility. On October 4, 1984 Mr. Dwight Landry and I collected soil samples from this area. We used a Viehmeyer soil sampler and we collected samples from two locations within the dike surrounding the sulfuric acid tanks. At each location we collected one sample from the surface to 6 inch depth and one from the 12 - 18 inch depth. In addition, we collected a background sample from a location away from the corrosive diked area.

The samples were analyzed by McKesson Environmental Services, a DOHS-approved laboratory. The results are attached. The samples identified by "A" represent the 0-6 inch depth and the "B" samples represent the 12 - 18 inch depth. The data indicate this soil is free of EP Toxic components.

We trust this information is satisfactory.

Sincerely,



Douglas L. Eisner
Technical Director

DLE:md
Attachment

cc: Mr. ~~Dwight Landry~~



Serving the Nation
Since 1833

MK00040235

MKIL01289

McKesson
7164-QD

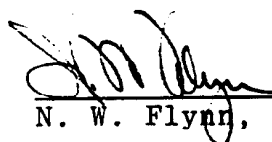
Analytical Results
McKesson Technical Services

Date Received: 10/11/84
Date Reported: 10/29/84

| | | | | | | |
|--------------|-------|-------|-------|-------|-------|-----------|
| Lab No.: | 17143 | 17144 | 17145 | 17146 | 17147 | DETECTION |
| Sample I.D.: | 1A | 1B | 2A | 2B | 3A | LIMITS |

| <u>Compound</u> | <u>Concentration in µg/L</u> | | | | | |
|-----------------|------------------------------|----|----|----|----|------|
| Y-BHC | ND | ND | ND | ND | ND | 0.26 |
| Endrin | ND | ND | ND | ND | ND | 0.26 |
| Toxaphene | ND | ND | ND | ND | ND | 12 |

ND = Not Detected


N. W. Flynn, Laboratory Manager

CERTIFICATION OF REPRESENTATIVE SAMPLE OR SAMPLE INTEGRITY IS NOT
MADE BY MCKESSON ENVIRONMENTAL SERVICES (MES) FOR SAMPLES NOT TAKEN
BY MES.

MK00040236

MKIL01290

McKesson

Analytical Results
McKesson Technical Services
HERBICIDE ANALYSIS: EP TOXICITY

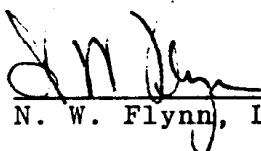
Samples Received: 10/11/84

| | | | | | |
|--------------|-------|-------|-------|-------|-------|
| Lab No.: | 17143 | 17144 | 17145 | 17146 | 17147 |
| Sample I.D.: | 1A | 1B | 2A | 2B | 3A |

| <u>Parameter</u> | <u>Concentration in µg/L</u> | | | | |
|------------------|------------------------------|----|----|----|----|
| 2,4-D | ND | ND | ND | ND | ND |
| 2,4,5-TP | ND | ND | ND | ND | ND |

ND = Not Detected

Detection Limits: 2,4-D: 0.05 µg/L
2,4,5-TP: 0.025 µg/L


N. W. Flynn, Laboratory Manager

CERTIFICATION OF REPRESENTATIVE SAMPLE OR SAMPLE INTEGRITY IS NOT MADE
BY MCKESSON ENVIRONMENTAL SERVICES (MES) FOR SAMPLES NOT TAKEN BY MES.

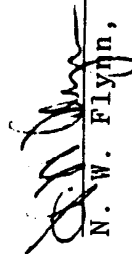
MK00040237

MKIL01291

7164-QD

Analytical ResultsMcKesson Technical ServicesMETAL ANALYSIS: EP TOXICITY

| Lab No.: | 17143 | 17144 | 17145 | 17146 | 17147 | MAXIMUM CONCENTRATION, mg/L |
|-----------------|--------|--------|--------|--------|--------|-----------------------------------|
| Sample I.D.: | 1A | 1B | 2A | 2B | 3A | |
| <u>Analysis</u> | | | | | | |
| Arsenic | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 5.0 |
| Barium | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 100.0 |
| Cadmium | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | 1.0 |
| Chromium | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 5.0 |
| Lead | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 5.0 |
| Mercury | <0.004 | <0.004 | <0.004 | <0.004 | <0.004 | 0.2 |
| Selenium | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | 1.0 |
| Silver | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 5.0 |


 N. W. Flynn, Laboratory Manager

CERTIFICATION OF REPRESENTATIVE SAMPLE OR SAMPLE INTEGRITY IS NOT MADE BY MCKESSON ENVIRONMENTAL SERVICES (MES) FOR SAMPLES NOT TAKEN BY MES.

MK00040238

MKIL01292

Attachment 9

To
DISTRIBUTION
SEE ATTACHED

Date
March 19, 1985

McKesson

From
Shri Nandan

Location Tel.
McKesson Environmental
Services

Intra Company
Correspondence

Subject
SANTA FE SPRINGS-PRF
SITE INSPECTION/PVC
PIPE LEAK

Copies To

OBSERVATIONS

1. In early March it was observed that liquid was bubbling through asphalt above underground PVC pipe connecting the drum filling station to the neutralization pit.
2. Concurrently, the existing water line has been leaking 15' from fill station.

REMEDIAL ACTIONS

Friday March 15, 1985 Actions

1. Excavation was done to the underground PVC pipe to trace source of leak; all the way to the neutralization pit.
2. pH of leaked material was checked to be approximately 2.0.
3. On further excavation a small puddle approximately 2' below grade was found at the "T" in the 4" line (see attached sketch). Puddle pH 2.0, approximate volume 1/2 gallon. This was pumped to neutralization pit which is lined with 1/8" vinyl bag liner.
4. Excavation continued to a total depth of 10' - 12'. Subsurface material was found to be of neutral pH and "hard pan" layers encountered at 3' and 6'. A second "puddle" of no more than a quart in volume of accumulated liquids was found above the lower "hard pan" layer. This was also acidic and could not be removed by pumping due to insufficient quantity.
5. The underground PVC piping was discovered to be leaking at the glued joints. The entire line will be replaced with schedule 80 CPVC pipe with glued and welded joints. The piping will be pressure checked prior to operation.

MK057361

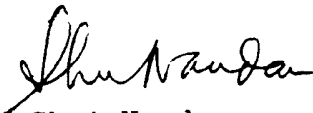
MKIL16771

Page 2

March 19, 1985

SANTA FE SPRINTS-PRF SITE
INSPECTION/PVC PIPE LEAK

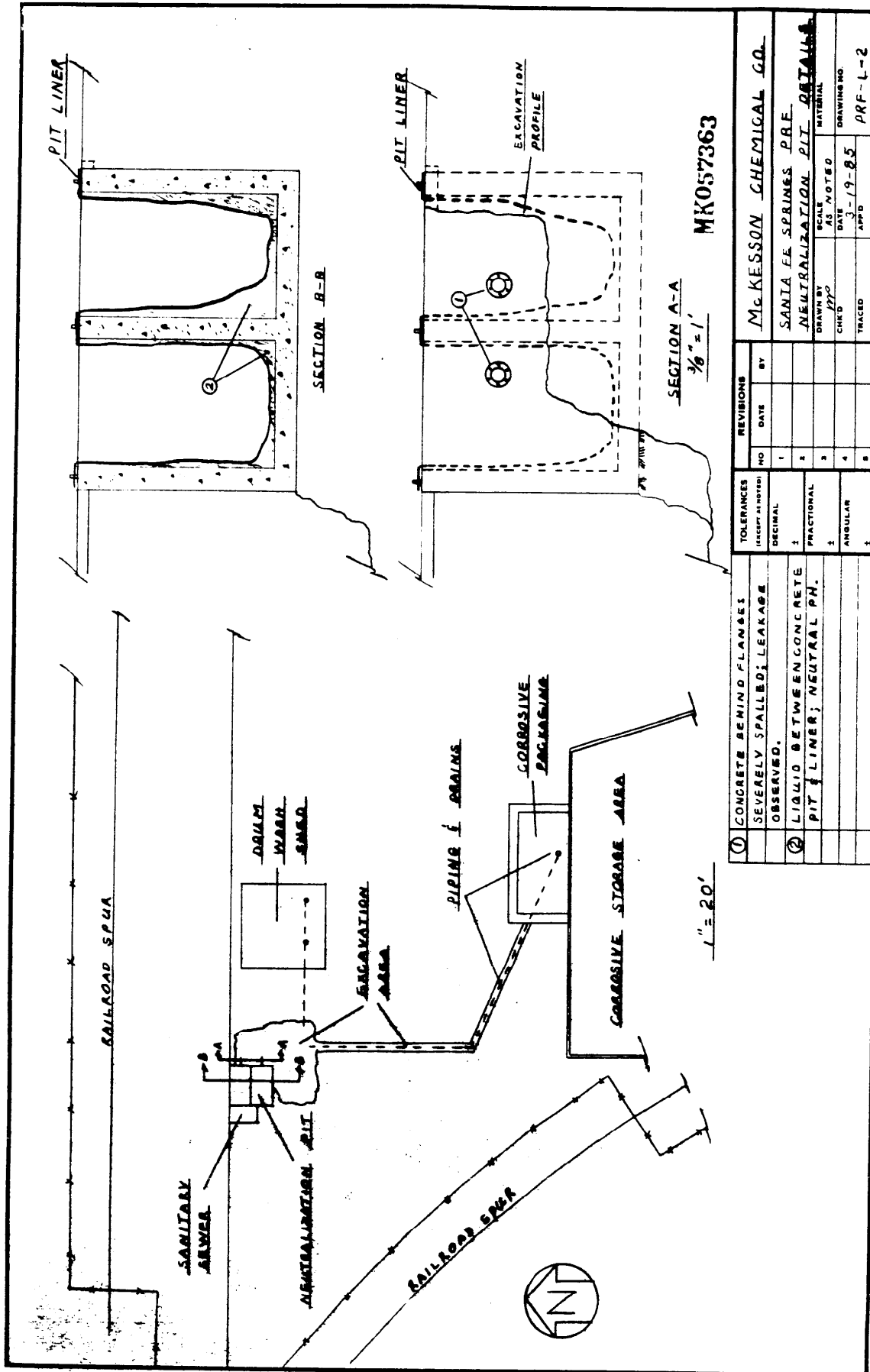
6. The new underground pipe will be installed in a concrete trench with a grating. This trench will drain into a catch basin. Any accumulated material in the catch basin will be checked and pumped into the neutralization pit.
7. Remedial action around the neutralization pit will be formulated on inspection below the liner, scheduled for March 20, 1985.
8. No physical evidence of moisture (or wetness) was observed subsurface in the vicinity of the neutralization pit in the excavation hole.
9. Some liquid was believed to be trapped between the vinyl bag liner and the concrete shell. This liquid was pressured out when the neutralization pit was filled with water on March 19th.
10. The liquid puddled in the freshly dug pit and was sampled and checked for pH. pH was neutral. The liquid egressed through gaps between the inlet fill line and the concrete wall of the neutralization pit. This was physically observed.
11. This does not constitute to be "reportable incident" because of the small quantity of material involved. Proper documentation of all activities should be maintained at the facility.


Shri Nandan

SN:sw

MK057362

MKIL16772



MK057363

| TOLERANCES (EXCEPT AS NOTED) | | REVISIONS | |
|---------------------------------|------------|-----------|------|
| DECIMAL | FRACTIONAL | NO | DATE |
| 1 | 1 | 1 | |
| 2 | 2 | 2 | |
| 3 | 3 | 3 | |
| 4 | 4 | 4 | |
| 5 | 5 | 5 | |

| | |
|---|--|
| ① CONCRETE BEHIND FLANGES SEVERELY SPALLED; LEAKAGE OBSERVED. | |
| ② LIQUID BETWEEN CONCRETE PIT LINER; NEUTRAL PH. | |
| | |
| | |
| | |

McKESSON CHEMICAL CO.

SANTA FE SPRINGS PRE.

NEUTRALIZATION PIT DETAILS

DRAWN BY: SCALE: AS NOTED MATERIAL

CHK'D: DATE: 3-19-85 DRAWING NO.

TRACED: APP'D: PRF-L-2

WELDING POST 184E-06 -11177

DISTRIBUTION:

A. M. McMahon - WRO
J. F. Lacey - WRO
L. D. Landry - WRO
M. K. Peterson - WRO
C. Kussler - PRF-SFS
B. R. Crumm - L. A. Area
M. D. Sands - MES
G. N. Butter - MES

MK057364

MKIL16774

Attachment 10

See Attachment 3

Attachment 11

RECEIVED

MAY - 8 1986

To
Walter Loo

Date
May 1, 1986

M-Kesson

From
Karen Bankert

Location/Tel.
Environmental Services
426-2661

Intra Company
Correspondence

Subject
Analytical Results
Santa Fe Springs

Copies To

7520-QD

Attached are results for three (3) water and six (6) soil from two groups of samples received March 20 and 25, 1986. The samples were analyzed in the following way:

EPA 624/8240 for purgeable organic priority pollutants plus acetone, isopropanol, hexane, heptane; glycols and cellosolves by direct injection

EPA 610/8100 for total hydrocarbons - Mineral Spirits, Naphthalene, Stoddard Solvent, PX-2 and PX-3

EPA 8015 for methanol (water extraction for soil)

HPLC analysis for Sorbitol

EPA 8270 (1 Soil) extractable organics

Results for mineral spirits, stoddard solvent, PX-2 and PX-3 are reported as Total Hydrocarbons. Because these chemicals are multi-component hydrocarbon mixtures, we are not able to identify them individually in these samples. It appears that "diesel" was found in one of the water samples.

If you have questions, please call.


KEB/pf
Attch.

SAMPLES NOT DESTROYED IN TESTING ARE RETAINED A MAXIMUM OF 30 DAYS
UNLESS OTHERWISE REQUESTED.

MK00048560

MKIL16245

PRIORITY POLLUTANT ANALYSISSanta Fe Springs
McKesson Chemical

Lab Number: 8603123-18
Sample I.D.: MW-1
Date Received: 03-25-86
Date Analyzed: 04-15-86

Detection Limit Factor: 500

| <u>VOLATILES</u> | <u>CONCENTRATION</u> µg/L |
|--------------------------------|------------------------------|
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | 2,500 |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | 32,000 |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | ND |
| methylene chloride | 430,000 |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 110,000 |
| toluene | 18,000 |
| 1,1,1-trichloroethane | 880,000 |
| 1,1,2-trichloroethane | ND |
| trichloroethene | 4,500 |
| vinyl chloride | ND |

| <u>OTHER COMPOUNDS FOUND</u> | <u>CONCENTRATION</u> µg/L |
|------------------------------|------------------------------|
| freon 113 | 500 |
| acetone | 430,000 |
| isopropanol | 130,000 |
| methyl ethyl ketone | 210,000 |
| hexane | ND |
| heptane | ND |
| butyl cellosolve | 130,000 |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Gary Costley MKB

Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MK00048561

MKIL16246

PRIORITY POLLUTANT ANALYSIS

Santa Fe Springs
McKesson Chemical

Lab Number: 8603123-19
Sample I.D.: MW-3
Date Received: 03-25-86
Date Analyzed: 04-15-86

Detection Limit Factor: 500

| <u>VOLATILES</u> | <u>CONCENTRATION</u> μg/L |
|--------------------------------|------------------------------|
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | ND |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | 7,500 |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | ND |
| methylene chloride | 67,000 |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 22,000 |
| toluene | ND |
| 1,1,1-trichloroethane | 220,000 |
| 1,1,2-trichloroethane | ND |
| trichloroethene | 1,500 |
| vinyl chloride | ND |

| <u>OTHER COMPOUNDS FOUND</u> | <u>CONCENTRATION</u> μg/L |
|------------------------------|------------------------------|
| acetone | 23,000 |
| isopropanol | ND |
| methyl ethyl ketone | ND |
| hexane | ND |
| heptane | ND |
| butyl cellosolve | ND |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Gary Cortley M.E.S.

Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MK00048562

MKIL16247

PRIORITY POLLUTANT ANALYSIS

Lab Number: 8603123-20

Sample I.D.: MW-4

Date Received: 03-25-86

Date Analyzed: 04-15-86

Detection Limit Factor: 500

| <u>VOLATILES</u> | <u>CONCENTRATION</u> µg/L |
|--------------------------------|------------------------------|
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | 5,000 |
| 1,2-dichloroethane | 11,000 |
| 1,1-dichloroethene | 34,000 |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | ND |
| methylene chloride | 730,000 |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 96,000 |
| toluene | 38,000 |
| 1,1,1-trichloroethane | 740,000 |
| 1,1,2-trichloroethane | ND |
| trichloroethene | 31,000 |
| vinyl chloride | ND |

| <u>OTHER COMPOUNDS FOUND</u> | <u>CONCENTRATION</u> µg/L |
|------------------------------|------------------------------|
| m-xylene | 2,000 |
| o-,p-xylenes | 1,000 |
| acetone | 160,000 |
| isopropanol | ND |
| methyl ethyl ketone | ND |
| hexane | ND |
| heptane | ND |
| butyl cellosolve | 270,000 |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MK00048563

MKIL16248

PRIORITY POLLUTANT ANALYSIS

Santa Fe Springs
McKesson Chemical

624 DETECTION LIMITS = Detection Limit Factor X Concentration

5ml Water Sample

| <u>VOLATILES</u> | <u>CONCENTRATION</u> <u>µg/L</u> |
|--------------------------------|-------------------------------------|
| benzene | 1 |
| bromodichloromethane | 1 |
| bromoform | 1 |
| bromomethane | 1 |
| carbon tetrachloride | 1 |
| chlorobenzene | 1 |
| chloroethane | 1 |
| 2-chloroethylvinyl ether | 1 |
| chloroform | 1 |
| chloromethane | 1 |
| dibromochloromethane | 1 |
| 1,2-and/or 1,4-dichlorobenzene | 3 |
| 1,3-dichlorobenzene | 2 |
| 1,1-dichloroethane | 1 |
| 1,2-dichloroethane | 1 |
| 1,1-dichloroethane | 1 |
| trans-1,2-dichloroethene | 1 |
| 1,2-dichloropropane | 1 |
| cis-1,3-dichloropropene | 1 |
| trans-1,3-dichloropropene | 1 |
| ethyl benzene | 2 |
| methylene chloride | 2 |
| 1,1,2,2-tetrachloroethane | 1 |
| tetrachloroethene | 1 |
| toluene | 1 |
| 1,1,1-trichloroethane | 1 |
| 1,1,2-trichloroethane | 1 |
| trichloroethene | 1 |
| vinyl chloride | 1 |

| <u>OTHER COMPOUNDS FOUND</u> | <u>CONCENTRATION</u> <u>µg/L</u> |
|------------------------------|-------------------------------------|
| Freon 113 | 1 |
| m-xylene | 1 |
| o-,p-xylene | 1 |
| acetone | 5 |
| isopropanol | 10 |
| methyl ethyl ketone | 5 |
| hexane | 1 |
| heptane | 1 |
| butyl cellosolve | 2,000 |
| cellosolve acetate | 3,000 |
| ethylene glycol | 125,000 |
| propylene glycol | 10,000 |

Gary Costley mds
Laboratory Supervisor

ND = Not Detected

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MK00048564

MKIL16249

PRIORITY POLLUTANT ANALYSIS

Lab Number: 8603103-01
Sample I.D.: SB1-S30
Date Received: 03-2-86
Date Analyzed: 04-21-86

Detection Limit Factor: 0.025

| <u>VOLATILES</u> | <u>CONCENTRATION</u> mg/kg |
|--------------------------------|-------------------------------|
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | 0.20 |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | ND |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | ND |
| methylene chloride | 4.3 |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 2.2 |
| toluene | 0.20 |
| 1,1,1-trichloroethane | 2.0 |
| 1,1,2-trichloroethane | ND |
| trichloroethene | 0.10 |
| vinyl chloride | ND |

| <u>OTHER COMPOUNDS FOUND</u> | <u>CONCENTRATION</u> mg/kg |
|------------------------------|-------------------------------|
| acetone | 200 |
| isopropanol | ND |
| methyl ethyl ketone | 130 |
| hexane | ND |
| heptane | ND |
| butyl cellosolve | 390 |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MK00048565

MKIL16250

PRIORITY POLLUTANT ANALYSIS

Lab Number: 8603103-06
 Sample I.D.: SB1-S37
 Date Received: 03-20-86
 Date Analyzed: 04-21-86

Detection Limit Factor: 0.025

| <u>VOLATILES</u> | <u>CONCENTRATION</u> mg/kg |
|--------------------------------|-------------------------------|
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | ND |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | ND |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | ND |
| methylene chloride | 1.8 |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 0.13 |
| toluene | ND |
| 1,1,1-trichloroethane | 0.08 |
| 1,1,2-trichloroethane | ND |
| trichloroethene | ND |
| vinyl chloride | ND |

| <u>OTHER COMPOUNDS FOUND</u> | <u>CONCENTRATION</u> mg/kg |
|------------------------------|-------------------------------|
| acetone | 60 |
| isopropanol | ND |
| methyl ethyl ketone | 51 |
| hexane | ND |
| heptane | ND |
| butyl cellusolve | 87 |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Gary Costley mAB

Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MK00048566

MKIL16251

PRIORITY POLLUTANT ANALYSIS

Lab Number: 8603103-11
 Sample I.D.: SB2-S35
 Date Received: 03-20-86
 Date Analyzed: 04-21-86

Detection Limit Factor: 0.025

| <u>VOLATILES</u> | <u>CONCENTRATION</u> mg/kg |
|--------------------------------|-------------------------------|
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | ND |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | ND |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | ND |
| methylene chloride | 2.2 |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 0.05 |
| toluene | ND |
| 1,1,1-trichloroethane | 0.03 |
| 1,1,2-trichloroethane | ND |
| trichloroethene | ND |
| vinyl chloride | ND |

| <u>OTHER COMPOUNDS FOUND</u> | <u>CONCENTRATION</u> mg/kg |
|------------------------------|-------------------------------|
| acetone | 2.7 |
| isopropanol | ND |
| methyl ethyl ketone | 2.0 |
| hexane | ND |
| heptane | ND |
| butyl cellosolve | ND |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Gary Costley mss

Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MK00048567

MKIL16252

MAJORITY POLLUTANT ANALYSIS

Lab Number: 8603103-15
 Sample I.D.: SB3-S36
 Date Received: 03-20-86
 Date Analyzed: 04-21-86

Detection Limit Factor: 0.025

| <u>VOLATILES</u> | <u>CONCENTRATION</u> mg/kg |
|--------------------------------|-------------------------------|
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | ND |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | ND |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | ND |
| methylene chloride | 3.5 |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 0.18 |
| toluene | ND |
| 1,1,1-trichloroethane | 1.1 |
| 1,1,2-trichloroethane | ND |
| trichloroethene | ND |
| vinyl chloride | ND |

| <u>OTHER COMPOUNDS FOUND</u> | <u>CONCENTRATION</u> mg/kg |
|------------------------------|-------------------------------|
| acetone | 1.4 |
| isopropanol | ND |
| methyl ethyl ketone | ND |
| hexane | ND |
| heptane | ND |
| butyl cellosolve | ND |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Larry Costley mbb
 Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MK00048568

MKIL16253

PRIORITY POLLUTANT ANALYSIS

Lab Number: 8603103-21
Sample I.D.: SB1-S25
Date Received: 03-20-86
Date Analyzed: 04-22-86

Detection Limit Factor: 0.025

| | <u>CONCENTRATION</u> |
|--------------------------------|----------------------|
| <u>VOLATILES</u> | <u>mg/kg</u> |
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | ND |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | 0.93 |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | 0.63 |
| methylene chloride | 0.20 |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 94 |
| toluene | 3.7 |
| 1,1,1-trichloroethane | 56 |
| 1,1,2-trichloroethane | ND |
| trichloroethene | 0.55 |
| vinyl chloride | ND |

| | <u>CONCENTRATION</u> |
|------------------------------|----------------------|
| <u>OTHER COMPOUNDS FOUND</u> | <u>mg/kg</u> |
| freon 113 | 0.78 |
| m-xylene | 1.8 |
| o-,p-xylenes | 0.9 |
| acetone | 2.3 |
| isopropanol | ND |
| methyl ethyl ketone | ND |
| hexane | ND |
| heptane | ND |
| butyl cellosolve | ND |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Gary Crotty mms

Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MK00048569

MKIL16254

PRIORITY POLLUTANT ANALYSIS

Lab Number: 8603123-05
 Sample I.D.: OW2-25
 Date Received: 03-25-86
 Date Analyzed: 04-22-86

Detection Limit Factor: 0.025

| <u>VOLATILES</u> | <u>CONCENTRATION</u> mg/kg |
|--------------------------------|-------------------------------|
| benzene | ND |
| bromodichloromethane | ND |
| bromoform | ND |
| bromomethane | ND |
| carbon tetrachloride | ND |
| chlorobenzene | ND |
| chloroethane | ND |
| 2-chloroethylvinyl ether | ND |
| chloroform | ND |
| chloromethane | ND |
| dibromochloromethane | ND |
| 1,2-and/or 1,4-dichlorobenzene | ND |
| 1,3-dichlorobenzene | ND |
| 1,1-dichloroethane | ND |
| 1,2-dichloroethane | ND |
| 1,1-dichloroethene | ND |
| trans-1,2-dichloroethene | ND |
| 1,2-dichloropropane | ND |
| cis-1,3-dichloropropene | ND |
| trans-1,3-dichloropropene | ND |
| ethyl benzene | ND |
| methylene chloride | ND |
| 1,1,2,2-tetrachloroethane | ND |
| tetrachloroethene | 0.05 |
| toluene | ND |
| 1,1,1-trichloroethane | ND |
| 1,1,2-trichloroethane | ND |
| trichloroethene | ND |
| vinyl chloride | ND |

| <u>OTHER COMPOUNDS FOUND</u> | <u>CONCENTRATION</u> mg/kg |
|------------------------------|-------------------------------|
| acetone | 5.4 |
| isopropanol | ND |
| methyl ethyl ketone | ND |
| hexane | ND |
| heptane | ND |
| butyl cellosolve | ND |
| cellosolve acetate | ND |
| ethylene glycol | ND |
| propylene glycol | ND |

Gary Costley m & B

Laboratory Supervisor

ND = Not detected.

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MK00048570

MKIL16255

PRIORITY POLLUTANT ANALYSIS

8240 DETECTION LIMITS = Detection Limit Factor X Concentration

| <u>VOLATILES</u> | | <u>OTHER COMPOUNDS FOUND</u> | |
|--------------------------------|-------------------------------|------------------------------|-------------------------------|
| | <u>CONCENTRATION</u> mg/kg | | <u>CONCENTRATION</u> mg/kg |
| benzene | 1 | Freon 113 | 1 |
| bromodichloromethane | 1 | m-xylene | 1 |
| bromoform | 1 | o-,p-xylene | 1 |
| bromomethane | 1 | acetone | 5 |
| carbon tetrachloride | 1 | isopropanol | 10 |
| chlorobenzene | 1 | methyl ethyl ketone | 5 |
| chloroethane | 1 | hexane | 1 |
| 2-chloroethylvinyl ether | 1 | heptane | 1 |
| chloroform | 1 | butyl cellosolve | 2000 |
| chloromethane | 1 | cellosolve acetate | 3000 |
| dibromochloromethane | 1 | ethylene glycol | 125,000 |
| 1,2-and/or 1,4-dichlorobenzene | 3 | propylene glycol | 10,000 |
| 1,3-dichlorobenzene | 2 | | |
| 1,1-dichloroethane | 1 | | |
| 1,2-dichloroethane | 1 | | |
| 1,1-dichloroethane | 1 | | |
| trans-1,2-dichloroethene | 1 | | |
| 1,2-dichloropropane | 1 | | |
| cis-1,3-dichloropropene | 1 | | |
| trans-1,3-dichloropropene | 1 | | |
| ethyl benzene | 2 | | |
| methylene chloride | 2 | | |
| 1,1,2,2-tetrachloroethane | 1 | | |
| tetrachloroethene | 1 | | |
| toluene | 1 | | |
| 1,1,1-trichloroethane | 1 | | |
| 1,1,2-trichloroethane | 1 | | |
| trichloroethene | 1 | | |
| vinyl chloride | 1 | | |

Gary Cutting
Laboratory Supervisor
ND = Not Detected

* = Compound detected; concentration below level for accurate quantitation.

** = Estimated value; compound saturated detector.

MK00048571

MKIL16256

ANALYTICAL RESULTSSANTA FE SPRINGS

Date Received: 3-25-86

| | | |
|--------------|------------|------------|
| Lab No.: | 8603123-19 | 8603123-20 |
| Sample I.D.: | MW-3 | MW-4 |

Concentration in µg/L

| | | |
|---|-----|-------|
| Total Hydrocarbons * (low to medium boiling point range) | 51 | 7,000 |
| Total Hydrocarbons as Diesel | 250 | ND |
| Naphthalene | ND | 240 |

ND = Not Detected

Detection Limits: Low to Medium Boiling Point Range: 50 µg/L
Diesel: 100 µg/L
Naphthalene: 10 µg/L

* - Includes PX-2, PX-3, Mineral Spirits, Stoddard Solvent, and gasoline

Michael Larson mlg
Laboratory Supervisor

MK00048572

MKIL16257

ANALYTICAL RESULTS

SANTA FE SPRINGS

Date Received: 3-20 and 3-25-86

| | | | | | | |
|--------------|------------|------------|------------|------------|------------|----------|
| Lab No.: | 8603103-01 | 8603103-06 | 8603103-11 | 8603103-15 | 8603103-21 | 8603123- |
| Sample I.D.: | SB1 S30 | SB1 S37 | SB2 S35 | SB3 S36 | SB1 S25 | OW-2 |

Concentration in mg/kg

| | | | | | | |
|-------------------------------------|-----|----|----|----|----|----|
| Total Hydrocarbons * | 37 | ND | ND | ND | 14 | ND |
| (low to medium boiling point range) | | | | | | |
| Total Hydrocarbons as Diesel | ND | ND | ND | ND | ND | ND |
| Naphthalene | 0.2 | ND | ND | ND | ND | ND |

ND = Not Detected

Detection Limits: Low to Medium Boiling Point Range: 1 ppm
Diesel: 2 ppm
Naphthalene: 0.2 ppm

* - Includes PX-2, PX-3, Mineral Spirits, Stoddard Solvent, and gasoline

Michael Larson mds
Laboratory Supervisor

MK00048573

ANALYTICAL RESULTS

SANTA FE SPRINGS

Date Received: MES Batch 8603103, 3-20-86
MES Batch 8603123, 3-25-86

| | | | | | | |
|--------------|------------|------------|------------|------------|------------|------------|
| Lab No.: | 8603103-01 | 8603103-06 | 8603103-11 | 8603103-15 | 8603103-21 | 8603103-05 |
| Sample I.D.: | SBI-S30 | SBI-S37 | SB2-S35 | SB3-S36 | SBI-S25 | OW2-25' |

Concentration in mg/kg

PARAMETER

| | | | | | | |
|----------|----|---|---|---|---|----|
| Methanol | 11 | 5 | 9 | 8 | 2 | ND |
|----------|----|---|---|---|---|----|

ND = Not Detected

Detection Limits = 1 ppm

Michael Javor mds
Laboratory Supervisor

MK00048574

ANALYTICAL RESULTSSANTA FE SPRINGS

Date Received: 03-25-86

| | | |
|--------------|------------|------------|
| Lab No.: | 8603123-19 | 8603123-20 |
| Sample I.D.: | MW-3 | MW-4 |

| <u>PARAMETER</u> | <u>CONCENTRATION IN MG/L</u> | |
|------------------|------------------------------|----|
| Sorbitol | ND | ND |

ND = Not Detected

Detection Limits = 100 ppm

Michael Larson mLB
Laboratory Supervisor

MK00048575

MKIL16260

ANALYTICAL RESULTS

SANTA FE SPRINGS

Date Received: MES Batch 8603103, 03-20-86
MES Batch 8603123, 03-25-86

| | | | | | |
|--------------|------------|------------|------------|------------|------------|
| Lab No.: | 8603103-06 | 8603103-11 | 8603103-15 | 8603103-21 | 8603103-05 |
| Sample I.D.: | SB1-S37 | SB2-S35 | SB3-S36 | SB1-S25 | OW2-S25' |

PARAMETER CONCENTRATION IN mg/kg

| | | | | | |
|----------|----|----|----|----|----|
| Sorbitol | ND | ND | ND | ND | ND |
|----------|----|----|----|----|----|

ND = Not Detected

Detection Limits = 100 ppm

Michael Larson msl
Laboratory Supervisor

PRIORITY POLLUTANT ANALYSIS

7520-QD
SANTA FE SPRINGS
McKESSON CHEMICAL

Lab Number: 8603103-01
Sample I.D.: SBI-S30
Date Received: 03-20-86
Date Analyzed: 04-23-86

Detection Limit Factor = 0.2

| ACID COMPOUNDS | | mg/kg | BASE/NEUTRAL COMPOUNDS | | mg/kg |
|------------------------|------------------------------------|-------|------------------------|-------------------------------|-------|
| 21A | 2,4,6-trichlorophenol | ND | 41B | 4-bromophenyl phenyl ether | ND |
| 22A | p-chloro-m-cresol | ND | 42B | bis-(2-chloroisopropyl) ether | ND |
| 24A | 2-chlorophenol | ND | 43B | bis-(2-chloroethoxy) methane | ND |
| 31A | 2,4-dichlorophenol | ND | 52B | hexachlorobutadiene | ND |
| 34A | 2,4-dimethylphenol | ND | 53B | hexachlorocyclopentadiene | ND |
| 57A | 2-nitrophenol | ND | 54B | isophorone | ND |
| 58A | 4-nitrophenol | ND | 55B | naphthalene | 0.2 |
| 59A | 2,4-dinitrophenol | ND | 56B | nitrobenzene | ND |
| 60A | 4,6-dinitro-o-cresol | ND | 61B | N-nitrosodimethylamine | ND |
| 64A | pentachlorophenol | ND | 62B | N-nitrosodiphenylamine | ND |
| 65A | phenol | ND | 63B | N-nitrosodi-n-propylamine | ND |
| | | | 66B | bis-(2-ethylhexyl) phthalate | ND |
| | | | 67B | butyl benzyl phthalate | ND |
| | | | 68B | di-n-butyl phthalate | ND |
| | | | 69B | di-n-octyl phthalate | ND |
| | | | 70B | diethyl phthalate | ND |
| | | | 71B | dimethyl phthalate | ND |
| | | | 72B | benzo(a)anthracene | ND |
| | | | 73B | benzo(a)pyrene | ND |
| | | | 74B | 3,4-benzofluoranthene | ND |
| | | | 75B | benzo(k)fluoranthene | ND |
| | | | 76B | chrysene | ND |
| | | | 77B | acenaphthylene | ND |
| | | | 78B | anthracene | ND |
| | | | 79B | benzo(ghi)perylene | ND |
| | | | 80B | fluorene | ND |
| | | | 81B | phenanthrene | ND |
| | | | 82B | dibenzo(a,h)anthracene | ND |
| | | | 83B | indeno(1,2,3-cd)pyrene | ND |
| | | | 84B | pyrene | ND |
| | | | | | |
| BASE/NEUTRAL COMPOUNDS | | | | | |
| 1B | acenaphthene | ND | | | |
| 5B | benzidine | ND | | | |
| 8B | 1,2,4-trichlorobenzene | ND | | | |
| 9B | hexachlorobenzene | ND | | | |
| 12B | hexachloroethane | ND | | | |
| 18B | bis(2-chloroethyl)ether | ND | | | |
| 20B | 2-chloronaphthalene | ND | | | |
| 25B | 1,2-dichlorobenzene | ND | | | |
| 26B | 1,3-dichlorobenzene | ND | | | |
| 27B | 1,4-dichlorobenzene | ND | | | |
| 28B | 3,3'-dichlorobenzidine | ND | | | |
| 35B | 2,4-dinitrotoluene | ND | | | |
| 36B | 2,6-dinitrotoluene | ND | | | |
| 37B | 1,2-diphenylhydrazine (azobenzene) | ND | | | |
| 39B | fluoranthene | ND | | | |
| 40B | 4-chlorophenyl phenyl ether | ND | | | |

Gary Costley mds
Laboratory Supervisor

ND = Not Detected
* = Compound detected; concentration below level for accurate quantitation.

MK00048577

MKIL16262

PRIORITY POLLUTANT ANALYSIS

8270 DETECTION LIMITS = Detection Limit Factor X Concentration

| <u>ACID COMPOUNDS</u> | | <u>mg/kg</u> | <u>BASE/NEUTRAL COMPOUNDS</u> | | <u>mg/kg</u> |
|-------------------------------|-----------------------------------|--------------|-------------------------------|-------------------------------|--------------|
| 21A | 2,4,6-trichlorophenol | 1 | 41B | 4-bromophenyl phenyl ether | 1 |
| 22A | p-chloro-m-cresol | 1 | 42B | bis-(2-chloroisopropyl) ether | 1 |
| 24A | 2-chlorophenol | 1 | 43B | bis-(2-chloroethoxy) methane | 1 |
| 31A | 2,4-dichlorophenol | 1 | 52B | hexachlorobutadiene | 1 |
| 34A | 2,4-dimethylphenol | 1 | 53B | hexachlorocyclopentadiene | 1 |
| 57A | 2-nitrophenol | 1 | 54B | isophorone | 1 |
| 58A | 4-nitrophenol | 1 | 55B | naphthalene | 1 |
| 59A | 2,4-dinitrophenol | 5 | 56B | nitrobenzene | 1 |
| 60A | 4,6-dinitro-o-cresol | 1 | 61B | N-nitrosodimethylamine | 5 |
| 64A | pentachlorophenol | 1 | 62B | N-nitrosodiphenylamine | 1 |
| 65A | phenol | 1 | 63B | N-nitrosodi-n-propylamine | 1 |
| <u>BASE/NEUTRAL COMPOUNDS</u> | | | 66B | bis-(2-ethylhexyl) phthalate | 9 |
| 1B | acenaphthene | 1 | 67B | butyl benzyl phthalate | 1 |
| 5B | benzidine | 27 | 68B | di-n-butyl phthalate | 1 |
| 8B | 1,2,4-trichlorobenzene | 1 | 69B | di-n-octyl phthalate | 1 |
| 9B | hexachlorobenzene | 1 | 70B | diethyl phthalate | 1 |
| 12B | hexachloroethane | 1 | 71B | dimethyl phthalate | 8 |
| 18B | bis(2-chloroethyl)ether | 1 | 72B | benzo(a)anthracene | 1 |
| 20B | 2-chloronaphthalene | 1 | 73B | benzo(a)pyrene | 1 |
| 25B | 1,2-dichlorobenzene | 1 | 74B | 3,4-benzofluoranthrene | 2 |
| 26B | 1,3-dichlorobenzene | 1 | 75B | benzo(k)fluoranthene | 2 |
| 27B | 1,4-dichlorobenzene | 1 | 76B | chrysene | 2 |
| 28B | 3,3'-dichlorobenzidine | 38 | 77B | acenaphthylene | 1 |
| 35B | 2,4-dinitrotoluene | 1 | 78B | anthracene | 1 |
| 36B | 2,6-dinitrotoluene | 1 | 79B | benzo(ghi)perylene | 1 |
| 37B | 1,2-diphenylhydrazine(azobenzene) | 3 | 80B | fluorene | 1 |
| 39B | fluoranthene | 1 | 81B | phenanthrene | 1 |
| 40B | 4-chlorophenyl phenyl ether | 1 | 82B | dibenzo(a,h)anthracene | 1 |
| | | | 83B | indeno(1,2,3-cd)pyrene | 1 |
| | | | 84B | pyrene | 1 |

Mr Gary Cooley
Laboratory Supervisor

MK00048579

MKIL16264

SURROGATE RECOVERYVOA FRACTIONDate: 04/15/86

| Lab No. | Sample I.D. | Benzene-d ₆ | Toluene-d ₈ | Ethyl Benzene-d ₁₀ | Bromofluoro- Benzene |
|------------|-------------|------------------------|------------------------|----------------------------------|-------------------------|
| 8603123-18 | MW-1 | 113 | 139 | 128 | 146 |
| 8603123-19 | MW-3 | 114 | 145 | 139 | 158 |
| 8603123-20 | MW-4 | 114 | 134 | 123 | 144 |
| | | | | | |
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Gary Costley
Laboratory Supervisor

MK00048580

MKIL16265

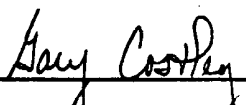
McKESSON ENVIRONMENTAL SERVICES

SURROGATE RECOVERY

VOA FRACTION

Date: 04-21 - 04-22-86

| Lab No. | Sample I.D. | Benzene-d ₆ | Toluene-d ₈ | Ethyl Benzene-d ₁₀ | Bromofluoro- Benzene |
|-------------|-------------|------------------------|------------------------|----------------------------------|-------------------------|
| VBM 4/21/86 | | 97 | 100 | 100 | 100 |
| 8603103-01 | SB1-S33-5 | 94 | 822 | 80 | 87 |
| 8603103-06 | SB1-S37 | 92 | 78 | 78 | 85 |
| 8603103-11 | SB2-S35 | 90 | 78 | 77 | 87 |
| 8603103-15 | SB3-S36 | 92 | 79 | 76 | 85 |
| 8603103-21 | SB1-S25 | 79 | 80 | 80 | 98 |
| VBM 4/22/86 | | 127 | 161 | 180 | 153 |
| 8603123-05 | OW2-25' | 129 | 159 | 176 | 151 |


Laboratory Supervisor

MK00048581

MKIL16266

Attachment 12

See Attachment 3

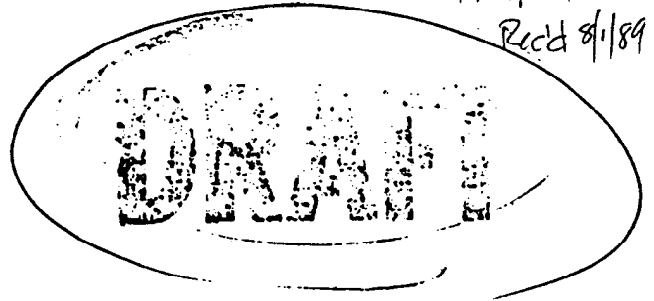
Attachment 13

APR 12 '89 12:25 TETRA TECH

PAGE.02

17333.009.11
Rec'd 8/1/89

REDACTED



April 11, 1989

Mr. Dennis Dickerson, Chief
Department of Health Services
Toxic Substances Control Division
1405 North San Fernando Blvd., Suite 300
Burbank, CA 91504

TC-3758-02

Attention: Ms. Melissa Boggs

Reference: Site Assessment
Contract No. 84-84543
Task Order No. 3-3-4.0-P07590
Subtask 2

Subject: Review of Documents
McKesson Chemical Company Site

Dear Mr. Dickerson:

Per your notification received by our office on February 3, 1989, we have completed review of documents on the McKesson Chemical Company site.

LIST OF DOCUMENTS REVIEWED

The following documents were reviewed:

1. Memo of call to DHS: Report of Sulfuric acid spill on January 5, 1982;
2. Letter from DHS to Foremost-McKesson Chemical Company with enclosure and dated March 11, 1983;
3. Letter from Foremost-McKesson Chemical Company to DHS dated May 24, 1983;
4. Letter from DHS to McKesson Chemical Company dated June 8, 1983;
5. Letter from McKesson Chemical Company to EPA, with enclosure and dated June 27, 1983;

MCK0018131

Mr. Dennis Dickerson
April 11, 1989
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6. Letter from DHS to McKesson Chemical Company, with enclosure dated October 24, 1983;
7. Letter from McKesson Chemical Company to DHS, dated December 22, 1983;
8. Letter from McKesson Chemical Company to DHS, with enclosure and dated February 13, 1984;
9. Letter from DHS to California Newspaper Service Bureau, Inc., with enclosure date February 15, 1984;
10. Letter from DHS to McKesson Chemical Company, dated February 29, 1984;
11. Preliminary Assessment, March 20, 1984;
12. Facility Inspection and Notice of Violation, dated April 13, 1984, and reinspection dated July 3, 1984;
13. Letter from McKesson Chemical Company to DHS, with attachment dated April 27, 1984;
14. Letter from McKesson Chemical Company to DHS, with enclosure, dated May 3, 1984;
15. Letter from McKesson Chemical Company to DHS, dated May 25, 1984;
16. Letter from McKesson Chemical Company to DHS, with enclosure, dated July 5, 1984;
17. Letter from McKesson Chemical Company to DHS, dated July 17, 1984;
18. DHS internal memorandum, with attachments, dated August 15, 1984;
19. Letter from DHS requiring submittal of a site characterization work plan dated October 5, 1987;
20. Hazardous Waste Facility Permit, issued October 16, 1984;
21. Letter from McKesson to DHS transmitting soil sampling results from solvent farm area, dated October 25, 1984;
22. DHS internal memorandum regarding cleanup of contaminated soil, dated November 28, 1984;

MCK0018132

APR 12 '89 12:26 TETRA TECH

PAGE.04

Mr. Dennis Dickerson
April 11, 1989
Page 3

23. Letter from McKesson Chemical Company transmitting additional soil sampling results from solvent farm area to DHS, dated December 6, 1984;
24. Sample Analysis Request, Chain-of-Custody and analytical results of soil and liquid samples taken by DHS from the tank farm area, dated January 29, 1985;
25. Hazardous waste manifest #84524608 for disposal of contaminated soil containing sulfates, nitrates and chlorides to Casmalia Resources, dated April 11, 1985;
26. Facility Inspection Report by DHS, dated May 2, 1985
27. Site Inspection Report by EPA Field Investigation Team, dated August 1, 1985;
28. Letter from McKesson Chemical Company to DHS dated September 12, 1985;
29. Letter from McKesson Chemical Company to DHS dated December 2, 1985;
30. Letter from DHS to McKesson Chemical Company dated December 18, 1985;
31. Letter from DHS requiring a Solvent Tank Farm Site Investigation Workplan from McKesson Chemical Company, dated January 8, 1986;
32. Letter from McKesson Chemical Company in response to December 12, 1986 inspection by DHS, dated January 15, 1986;
33. Solvent Tank Farm Site Investigation Workplan, dated February 13, 1986;
34. Letter from DHS to McKesson Chemical Company with comments on Solvent Tank Farm Site Investigation Workplan, dated March 5, 1986;
35. Letter from McKesson Chemical Company to DHS regarding status of Site Investigation, dated April 9, 1986;
36. Results of Site Investigation conducted by McKesson Chemical Company, dated May 21, 1986;
37. Letter from McKesson Chemical Company to DHS regarding sale of property, dated September 23, 1986;

MCK0018133

Mr. Dennis Dickerson
April 11, 1989
Page 4

38. Letter from DHS to McKesson Chemical Company, "McKesson Chemical Solvent Tank Farm Site Investigation EPA, #CAD060395753" comments;
39. Environmental Information Survey, by McKesson Environmental Services, Inc., dated November 7, 1986;
40. Letter from Harding Lawson Associates to DHS with RI/FS Workplan as an attachment, dated February 27, 1987;
41. DHS internal memorandum and comments on Site Safety Plan for RI/FS Workplan as attachment, dated March 10, 1987;
42. Letter from DHS to McKesson Operations Rescue Group requiring an Interim Remedial Measure (IRM), dated April 7, 1987;
43. Letter from McKesson to Disposal Control Services, Inc., directing to start work on IRM, dated April 10, 1987;
44. Letter from McKesson Chemical Company to DHS regarding progress of IRM, dated April 20, 1987;
45. Letter from McKesson Chemical Company to DHS regarding progress of IRM, dated April 30, 1987;
46. Letter from McKesson Chemical Company to DHS regarding progress of IRM, dated May 14, 1987;
47. Letter from DHS to McKesson Operations Resource Group with comments on RI/FS Workplan as attachment, dated June 22, 1987;
48. Letter from Harding Lawson Associates to DHS, with RI/FS Workplan (revised) dated July 17, 1987;
49. Letter from Harding Lawson Associates to DHS with Site Safety Plan plates, dated July 20, 1987;
50. Hazard Ranking System scores, dated July 24, 1987;
51. Memo from DHS to RWQCB requesting transfer of lead agency status to RWQCB, dated September 2, 1987;
52. Memo from RWQCB to DHS denying the request, dated October 27, 1987.

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A summary of the information obtained from the above documents follows. Relevant documents from the above-referenced documents are included for ease of reference.

SITE BACKGROUND

Location

McKesson Chemical Company (site) is located at 9005 Sorensen Avenue in the City of Santa Fe Springs in Los Angeles County, California.

History of Operations

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The subject site is a bulk repacking facility, previously operated by McKesson Chemical Company. The facility has closed operations-effective November 1, 1986.

The site is located in a highly industrialized area. McKesson Chemical Company began operations in 1976 as a division of McKesson Corporation. The property was leased by McKesson from Harvey Joseph Sorkin, Seymour Moslin and Paul Naslin. The facility received a Part B Hazardous Waste Facility Permit from the California Department of Health Services on October 16, 1984 for storage of process-derived hazardous wastes in drums (EPA ID No. CAD 060395753). Occasionally, the facility also accepted and stored spent solvents in drums from their customers for off-site recycling [Doc. 26]. Plate 1 presents the facility layout [Doc. 48].

Approximately 1,500 gpd of corrosive wastewater were generated on-site as a result of corrosive drum rinsing operations. The wash water was drained to a PVC-lined concrete neutralization pit and was continually monitored for pH prior to discharge to the Los Angeles County Sanitary Sewer. The rinsed drums were subsequently sent to a drum recycler and reconditioner. The drums were then returned to the facility or disposed of if unusable.

Isopropyl alcohol (IPA) was used as a flushing medium to clear residual solvents from solvent discharge lines in between packaging. When IPA became saturated in the process of flushing, it was then considered a hazardous waste and was stored in a designated storage area.

The hazardous waste drum storage area consisted of a covered, bermed, concrete area which measured 26' x 20' x 0.5'. Drums contained in this area were stored on wooden pallets that provided a total storage capacity of 144 drums. A maximum of

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4,000 gallons/year of flush material was produced at this facility, which was shipped to a local recycler (Oil and Solvent Processing Company) or to Systec's incineration facility located in Lebec, California [Doc 26, p. 4].

The facility also produced storm runoff on an intermittent basis which drained to a 2' x 2' x 4' concrete catch basin. The catch basin was equipped with a locking gate valve that controlled the flow of runoff to an off-site unlined ditch to the north of the property. This ditch is a tributary to Coyote Creek. Prior to discharging any liquids contained in the catch basin, a sample was collected and analyzed at the facility's lab for pH and specific gravity.

Above-ground hazardous material tank storage was segregated at three locations adjacent to the hydrogen peroxide, corrosive and solvent repack areas. The Santa Fe Springs facility had 23 underground tanks; 14 tanks were installed in 1974-1975, and the remainder were installed in 1981 or later. All underground tanks were used to store virgin organic solvents. Table 1 shows the products historically stored in the tanks.

Chronological History

A chronological history of the McKesson site is presented in Table 2.

HISTORY OF SPILLS, CHARACTERIZATION AND REMOVAL ACTIONS

SULFURIC ACID SPILL, 1979

Approximately 10,000 gallons of sulfuric acid was released due to a faulty valve. The spill was contained entirely within the corrosive dike. Approximately 7,000 gallons of acid was recovered by a vacuum truck. The balance was diluted with water, and was pumped to the on-site neutralization chamber. The soil was flooded with a soda-ash slurry in order to neutralize the soil. The spent slurry was pumped to the neutralization chamber. The upper 24 inches of soil was replaced with virgin fill and rock [Doc. 21; see Attachment 1].

SULFURIC ACID SPILL, 1982

Approximately 1,500 gallons of acid was reported spilled. The spill was contained within the diked area [Doc. 1; see Attachment 2]. The document indicates that McKesson planned to dispose of the wastes at BKK Landfill. No documentation is available on this removal action.

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TABLE I
PRODUCTS HISTORICALLY STORED IN THE
STORAGE TANK AREAS
McKESSON CHEMICAL COMPANY

Underground Storage Tank Area

| | |
|--------------------------------|----------------------------|
| Acetone | Chemical Waste |
| Cellosolve Acetate | Glycol Ether EG |
| Diesel | Hexane |
| Heptane | MCK Solvent 140F |
| Isopropyl Alcohol | Methanol |
| MCK Solvent VM&P (VM&P Naptha) | PX-2 (hydrocarbon solvent) |
| Methyl Ethyl Ketone (MEK) | Toluene |
| PX-3 (hydrocarbon solvent) | Xylene |

Above-ground Storage Tank Area

| | |
|-------------------------|-----------------------------|
| Ethylene Glycol | Propylene Glycol |
| Glycol Ether EB | 1,1,1 Trichloroethane (TCA) |
| Methylene Chloride | Trichloroethylene (TCE) |
| Perchloroethylene (PCE) | |

Corrosive/Oxidizer Tank Area

| | |
|------------------------|---------------------|
| Acetic acid, glacial | Phosphoric acid |
| Hydrochloric acid | Potassium hydroxide |
| Hydrogen Peroxide | Sodium Hydroxide |
| Hydroxyacetic acid | Sulfuric acid |
| Lime slurry | Triton |
| Nitric acid | |
| Hydrofluoric acid (HF) | |

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TABLE 2
CHRONOLOGICAL HISTORY
McKESON CHEMICAL COMPANY SITE

| | |
|--------------------|--|
| 1976 | McKesson begins operation at 9005 Sorensen Avenue site. |
| 1979 | Spill of 10,000 gallons of sulfuric acid. Spill reported to U.S. Coast Guard. Spill was contained within the diked area [Doc. 26, p. 6. No documentation in DHS file]. |
| December 27, 1977 | RWQCB cited facility for illegal disposal of wastewater into an unlined ditch. |
| March 24, 1980 | Chemical spills in the tank farm area reported during an inspection by County of Los Angeles, Department of County Engineer (LACE). pH of a sample obtained from yard's storm run-off catch basin was reported to be 1 [Doc. 11]. |
| January 6, 1982 | Spill of 1,500 gallons of sulfuric acid reported to DHS. Spill contained within diked area [Doc. 1]. |
| August 26, 1982 | LACE cited the facility for seepage of chemicals into the unlined ditch. Contaminated soil had been disposed of at BKK landfill. Cleanup of catch basin and unlined ditch ordered [Doc. 11, attachments]. |
| March 1984 | Preliminary Assessment of the site prepared by DHS [Doc. 11]. |
| April 13, 1984 | RCRA Facility Investigation conducted by DHS. Several RCRA violations were noted [Doc. 12, see Attachment]. Soil contaminated by chemical spills were noted in solvent tank storage area. Facility was directed to characterize and remediate the hazardous wastes. Free-standing liquid in the diked area was directed to be disposed of. |
| July 3, 1984 | RCRA Facility Reinspection conducted by DHS. RCRA violations were corrected, but no action had been taken to remediate the contaminated soil [Doc. 12]. |
| September 27, 1984 | Part B Hazardous Waste Facility Permit granted for 5 years [Doc. 20]. |
| October 5, 1984 | DHS formally requested McKesson to submit a soil characterization and cleanup plan for the solvent tank storage area [Doc. 19]. |
| October 25, 1984 | McKesson reported to DHS that soil samples from depths of 1, 3 and 6 feet were collected from three borings in the tank farm area. TCE was the sole CAM compound detected, at a level below STLC limits. Free-standing liquid was analyzed and found to contain non-RCRA wastes. The liquid was disposed of; no mitigation measure for the contaminated soil was proposed [Doc. 21]. |

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| | |
|-------------------|--|
| December 6, 1984 | Results of EP Toxicity tests from soil samples from the tank farm area at 6-, 12- and 18-inch depths showed that the soil samples were free of EP Toxic components [Doc. 23]. |
| January 25, 1985 | Four liquid samples and one soil sample collected from solvent tank farm area by DHS. Volatile organic contamination detected [Doc. 24]. |
| April 11, 1985 | Contaminated soil disposed of at Casmalia Resources, Hazardous Waste Manifest No. 84524608 [Doc. 25]. |
| July 10, 1985 | Site Inspection Report prepared by EPA Field Investigation Team [Doc. 27]. |
| March 18, 1986 | Solvent tank farm site investigation conducted. Three slant borings and four groundwater monitoring wells constructed. High volatile organic contaminant concentrations detected in groundwater [Doc. 36]. |
| November 1, 1986 | Facility operations were closed down. No closure plan found in DHS files. |
| November 7, 1986 | McKesson submitted Environmental Information Survey to DHS [Doc. 39]. |
| March 25, 1987 | Site inspection conducted by DHS. Several violations were noted. McKesson was directed to dispose of unlabeled drums containing hazardous wastes and free-standing liquid (pH 12) in the solvent tank farm area [Doc. 42]. |
| July 17, 1987 | McKesson submitted a RI/FS Workplan (Revised) [Doc. 48]. |
| July 24, 1987 | HRS package prepared by DHS. Scores of $S_M = 27.13$, $S_{FE} = 0.00$ and $S_{DC} = 0.00$ was assigned to the site [Doc. 50]. |
| September 2, 1987 | DHS requested transfer of lead agency status to RWQCB due to groundwater contamination from the site [Doc. 51]. |
| October 27, 1987 | Request denied by RWQCB [Doc. 52]. |

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ILLEGAL DISCHARGE INTO CREEK

The first record of citation for illegal discharge of wastewater into the creek was in 1977. Subsequently, the facility was cited in 1980 and 1982 for illegal discharge. In 1982, LACE directed the facility to clean up chemical contamination of the creek [Doc. 11; see Attachments 3,4]. Tetra Tech did not find any documentation showing that the creek was remediated.

SUMMARY OF SITE INVESTIGATIONS AND INTERIM REMEDIAL MEASURES

A summary of investigations conducted at the site and remediation measures adopted follow. The results of these investigations are included as tables and attachments, whichever is appropriate.

INTERIM REMEDIAL MEASURES, 1982

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Visual signs of chemical contamination had been reported in 1982. LACE directed the facility to mitigate the contamination. McKesson excavated the soil and disposed of the soil in BKK Landfill [Doc. 11].

INTERIM REMEDIAL MEASURES AT THE SOLVENT TANK FARM AREA, 1984

In a facility inspection on April 13, 1984, DHS observed signs of visual contamination in the solvent tank farm area. DHS required the removal of free-standing liquid in the tank farm area and cleanup of contaminated and sub-surface soils [Doc. 12].

In a letter dated April 27, 1984 [Doc. 13], McKesson intimated DHS that the RCRA violations were corrected. A re-inspection conducted on July 3, 1984 revealed that no action had been taken regarding disposal of wastes from the tank farm area [Doc. 12; see Attachment 5]. On October 5, 1984, DHS formally requested McKesson to submit a site characterization and clean up plan for the contaminated area [Doc. 19].

McKesson analyzed a sample collected from the free-standing liquid and determined the liquid to be a mixture of rainwater, glycols and glycol ethers [Doc. 21; see Attachment 6]. These are not listed as RCRA wastes. However, Doc. 21 does not include the results of other analyses that may have been conducted on the sample and also does not include the laboratory certificate of analyses. No QA/QC documentation was found. Doc. 21 mentions that the liquid was disposed of. Specifics of the disposal methods are unknown.

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Soil samples were collected from 1-, 3- and 6-foot depths from sampling locations shown on Attachment 7 [Doc. 21]. The rationale for selection of the sampling locations is unknown. The document indicates that the undisturbed soil samples were collected and handled in accordance with EPA-recommended protocol.

The document reports that trichloroethylene (TCE) was the only CAM-identified compound. The results of the analyses are shown in Attachment 8. The maximum TCE concentration was 33 ppm and was determined to be 14% of the CAM STLC limit.

QC/QC

The document does not indicate what analyses were conducted on the samples. No QA/QC documentation is attached.

Additional Soil Sampling

McKesson conducted EP Toxicity tests on two soil samples collected from the dike area [Doc. 23]. The sampling locations or the rationale for choosing the locations are unknown. The samples were collected from depths of 6 inches and 12-18 inches. The results of the analyses are shown in Attachments 9. The test results indicate that the samples were free of EP Toxic compounds. No QA/QC documents were found.

Liquid Sampling, January 25, 1985

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DHS collected samples of free-standing water in the solvent tank farm and caustic tank farm [Doc. 24]. The samples were analyzed for heavy metals, pH, headspace analysis by GC/MS and flammability. The results of the analyses are presented in Table 3.

Results of the analyses indicate that the free-standing water was contaminated with high concentrations of volatile organics. Heavy metal contamination was minimal. The standing water in the caustic tank farm did not seem to be contaminated.

Proposed IRM

In Doc. 21, McKesson argued that since there was no evidence of contamination of soil in the solvent tank farm area, IRM was not warranted. However, the company proposed to excavate the top 12-18 inches of soil and lay a concrete floor. No documentation on DHS comments or further action by McKesson could be found in the files. A Hazardous Waste Manifest for disposal

TABLE 3
ANALYTICAL RESULTS OF SAMPLES COLLECTED FROM TANK FARM
McKESSON CHEMICAL COMPANY SITE

Collected by: DHS
 Date of Collection: Jan. 25, 1985

| <u>Sample No.</u> | <u>Matrix</u> | <u>Field Information</u> | <u>Heavy Metals</u> <u>mg/l</u> | <u>Volatiles</u> <u>mg/l</u> | <u>Flash Point</u> <u>°F</u> | <u>pH</u> |
|-------------------|---------------|-------------------------------------|---|---|---------------------------------|-----------|
| MC001 | Liquid | NE Corner - Plant | Cd=0.8 Cr=1.1 Cu=3.3 Ni=1.8 Pb=5.2 Zn=4.7 | - | - | 8.2 |
| MC002 | Soil | Intake - Solvent tank farm | - | Acetone=100 mg/kg | - | - |
| MC003 | Liquid | Standing pond - Solvent tank farm | - | Acetone=6,800 Isopropyl alc.=3,100 1,1,1 TCA=370 PCE=14 Butyl cellusolve=32,000 | 140 | |
| MC004 | Liquid | Standing water in caustic tank farm | Cd=0.9 Cr=2.4 Cu=3.3 Ni=2.6 Pb=6.7 Zn=3.0. | - | - | 8.5 |
| MC005 | Liquid | Standing water in caustic tank farm | Cd=1.1 Cr=1.8 Cu=5.0 Ni=3.6 Pb=12 Zn=2.2 | - | - | 9.5 |

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of contaminated soil, dated April 11, 1985 [Doc. 25] was found. This Manifest may have been for disposal of contaminated soil generated during the proposed IRM.

The proposed concrete floor would serve only as a partial barrier to contaminated water due to concrete's porosity. It is not known if any liner material was underlain below the floor. Therefore, if the floor was constructed without any liner, the potential of contamination of the underlying native soil remained.

SOLVENT TANK FARM SITE INVESTIGATION, MARCH 18, 1986

In order to characterize the solvent tank farm area and to determine the extent of contamination, DHS required submittal of a tank farm site investigation plan for its review [Doc. 31] on January 8, 1986.

The Site Investigation Workplan was submitted to DHS on February 13, 1986 [Doc. 33]. The tank farm was proposed to be divided into 12 equal parts. A total of 11 soil boring locations to 10 feet depth were proposed and samples were to be collected at 4-5 foot intervals with California Sampler. The Workplan was modified by DHS to require sampling to a depth where contamination was not detectable by odors or visual determination [Doc 34].

The site investigation was conducted on March 18, 1986, in the presence of the DHS Project Officer.

Doc. 36 presents the data collected during the site investigation. Three slant soil borings underneath the solvent tank farm area and four monitoring wells into an apparent perched water table were constructed. Attachment 10 shows the locations of the borings and the wells. Tetra Tech could not determine the reason for constructing slant soil borings and monitoring wells instead of following the Workplan. Soil samples were collected at 5-foot intervals, and the depths of soil samples analyzed ranged from 25 to 37 feet. Three water samples were also analyzed.

Analytical results

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Table 4 presents the results of the analytical program. The samples were analyzed for purgeable volatile organics (EPA 624/8240), Total hydrocarbons (EPA 610/8100), non-halogenated volatiles as methanol (EPA 8015), semi-volatile organics (EPA 8270) and sorbitol (HPLC). Analyses of water samples from 3 wells indicated high concentrations of volatile organic

TABLE 4
ANALYTICAL RESULTS OF SOLVENT TANK FARM INVESTIGATION
MARCH 1986
McKESSON CHEMICAL COMPANY SITE

| Sample No. | Depth (feet) | Purgeable Organics | Total Hydrocarbons | Nonhalogenated | Semi-volatiles |
|---------------|-----------------|--|------------------------------|-----------------------------------|----------------|
| | | EPA 624/8240 (mg/L/mg/kg) | EPA 610/8100 (g/L/mg/kg) | Volatiles as Methanol EPA 8015 | EPA 8270 |
| Water Samples | | | | | |
| MW-1 | | 1,1 DCA=2.5 1,1 DCE=32 Methylene Cl=430 PCE=110 Toluene=18 1,1,1 TCA=880 TCE=4.5 Freon 113=0.5 Acetone=430 Isopropanol=130 MEK=210 Butyl cellusolve= 130 | | | |
| MW-3 | | 1,1 DCE=7.5 Methylene Cl=67 PCE=22 1,1,1 TCA=220 TCE=1.5 Acetone=23 | 51 THC as diesel= 250 | | |
| MW-4 | | 1,1 DCA=5 1,2 DCA=11 1,1 DCE=34 Meth Cl=730 PCE=96 Toluene=38 1,1,1 TCA=740 TCE=31 Xylenes=3 Acetone Butyl cellusolve= 270 | THC=7000 Napthalene=24 | | |

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Table 4 (cont.)

| Sample No. | Depth (feet) | Purgeable Organics | Total Hydrocarbons | Nonhalogenated | |
|------------------|-----------------|--|------------------------------|-----------------------------------|--|
| | | EPA 624/8240 (mg/L/mg/kg) | EPA 610/8100 (g/L/mg/kg) | Volatiles as Methanol EPA 8015 | Semi-volatiles EPA 8270 |
| Soil Samples | | | | | |
| SB1-S25 | 25' | 1,1 DCE=0.93 Ethyl Benzene=0.63 Meth Cl=0.2 Toluene=3.7 1,1,1 TCA=56 TCE=0.55 Freon 113=0.78 Xylenes=2.7 Acetone=2.3 | THC=14 | 2 | |
| SB1-S30 | 30' | 1,1 DCA=0.2 Meth Cl=4.3 PCE=2.2 Toluene=0.2 1,1,1 TCA=2 TCE=0.1 Acetone=200 MEK=130 Butyl cellusolve=390 | THC=37 Napthalene | 11 | Napthalene=0.2 Propanols=20 Ethanol=93 |
| SB1-S37 | 37' | Meth Cl=1.8 PCE=0.13 1,1,1 TCA=0.08 Acetone=60 MEK=51 Butyl cellusolve=87 | ND | 5 | |
| SB2-S35 | 35' | Meth Cl=2.2 PCE=0.05 1,1,1 TCA=0.03 Acetone=2.7 MEK=2 | ND | 9 | |
| SB3-S36 | 36' | Meth Cl=3.5 PCE=0.18 1,1,1 TCA=1.1 Acetone=1.4 | ND | 8 | |
| OW2-25 (MW-2) | 25' | PCE=0.05 Acetone=5.4 | ND | ND | |

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contaminants. Soil samples chosen for analyses were from depths at or below the perched water table. Significant concentration of volatile contaminants were also detected in the soil samples. The results seem to indicate that there is an attenuation of migration of contaminants with depth.

Quality Control

The laboratory results include duplicate analyses and matrix spike recovery results. The range of variance between the results are within acceptable limits. No chain-of-custody forms were found with the analytical results.

INTERIM REMEDIAL MEASURES, 1987 70

DHS conducted a site inspection on March 25, 1987 and observed that approximately 36 drums containing unknown hazardous wastes stored on-site. DHS also discovered several cases of chemicals in the laboratory and free standing liquid in the tank farm area. The liquid pH was tested to be 12. DHS ordered a cleanup of the area and also required that all underground tanks and lines should be emptied and disposed of [Doc. 42].

IRM was undertaken by McKesson [Dos. 44-46]. However, records of waste manifests, analytical results or documentation indicating that the IRM was completed were not found in the files.

ENVIRONMENTAL INFORMATION SURVEY

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An Environmental Information Survey (EIS) was prepared by McKesson and submitted to DHS [Doc. 39]. This report is a summary of the information collected to develop a general understanding of the area in the vicinity of the site. The topics that are discussed in this report are as follows:

- o The regional hydrogeology of the Santa Fe Springs area;
- o An inventory of water wells within a two-mile radius of the property;
- o An inventory of oil wells within a one-mile radius of the property;
- o A review of soil and groundwater studies conducted at facilities located in the vicinity of the property;
- o An inventory of registered underground storage tanks previously used by the McKesson bulk plant; and

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- o A reference list of data source used to compile the information contained in this report.

Doc. 39 reports the existence of 21 production wells within a 2-mile radius of the facility [see Attachment 11]. Attachment 12 shows the well locations. Water quality data were reported for some of the listed water wells (6 within 2-mile radius, 1 within 1-mile radius) including analyses for general minerals, volatile organics, metals and pesticides. Attachment 13 shows the results of the analyses.

Approximately 200 oil wells are located within a 1-mile radius of the property. All the oil wells are to the south of the plant (downgradient of the facility).

The document lists 23 underground storage tank at the facility [see Attachment 14]. The document reports that all the tanks were empty when the report was prepared and all of the tanks would be removed in accordance with approved closure plans.

SITE HYDROGEOLOGY

The site is located in the Montebello Forebay area of the Central Basin which is located in the Coastal Plan of Los Angeles County. Geologic cross sections and lithological logs from nearby wells indicate the site is underlain in order of increasing depth by the Gaspur, Gardena, Lynwood, Lilverado and Sunnyside aquifers. The Lynwood, Silverado and Sunnyside aquifers produce water of sufficient quality and quantity to be used for domestic consumption throughout the Coastal Plan. The closest drinking water well is located on Dice and Burke Road which is approximately 1/3 mile north of the site. The total depth of this well is 904 feet, and screened intervals are located from 200-288 feet and 300-900 feet. Depth to water in this well ranges from 57-71 feet below ground surface. Altogether, 21 production wells are located within a two-mile radius of the facility. The well depths range from 70-foot to 1052-foot below ground surface. The average water elevation in these wells ranged from 43-foot to 85-foot below grade (records were available for 4 wells). Three wells are located within 1-mile of the facility. The shallowest depth is 70-feet. Water elevation is not known. Groundwater contours derived from water levels in nearby wells tapping the shallow aquifers (i.e., less than 300 feet deep) indicate that local flow direction is slightly east of south.

The geologic logs for the monitoring wells and the slant borings are attached to Doc. 36. The logs indicate that silty

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and sandy clays exist up to a depth of 10 feet, followed by sand and gravelly sand up to a depth of 27 feet. Silty clay and clayey silts range from 27 feet to 40 feet below the surface.

A perched water table was found to exist at a depth of 29 feet. The direction of groundwater flow was established to be south-westerly. The depth of an unconfined aquifer is not known.

The geologic logs reported an "odor" in the samples. DHS field notes identifies the odor as solvent odor.

SITE INSPECTION REPORT

A Site Inspection Report was prepared by EPA Field Investigation Team (FIT) [Doc. 27]. The Report presents information on process description, waste streams, waste handling and management practices. This information has been summarized in previous sections.

The Report indicates that a RCRA inspection was conducted by DHS on January 13, 1984 and that 6 surface samples were collected from the solvent tank farm area [p. 5]. The samples were analyzed for priority pollutants. Tetra Tech did not find any documents in the files regarding this sampling event. The Report refers to its Appendix D for sampling results. However, Appendix D includes only the reports of the January 25, 1985 DHS sampling event [Doc. 24].

FIT also conducted a visual site inspection on February 26, 1986. The FIT reports that there was a discrepancy in the account of events described in correspondence to DHS [Doc. 21; see Attachment 1] and the description of actions offered by Production Operations Manager (Bill Crumm). FIT was told that the unrecoverable sulfuric acid was sold to San Joaquin Valley farmers as a soil supplement.

During the inspection, FIT was told that during heavy rains, the surface run-off catch basin overflowed and ponding occurred. FIT did not observe visible discoloration or stains of the ditch.

The Report lists the following four areas of concern:

1. 10,000-gallon spill of sulfuric acid in 1979;
2. Releases within the solvent tank farm berm associated with operating procedures;

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3. Waste discharges to the off-site unlined ditch; and
4. Twenty [Doc. 39 reports 23] single-walled, unprotected underground tanks containing virgin organic solvents.

RI/FS Workplan

McKesson submitted a RI/FS Workplan (prepared by Harding Lawson Associates) to DHS [Doc. 48] in order to identify and characterize the nature and extent of contamination.

The investigation was proposed in two phases. Phase I was proposed to obtain initial soil and groundwater samples in areas where known or suspected releases have occurred. Phase 2 was proposed to obtain data to more completely characterize the subsurface conditions at the site and the nature and extent of any soil/groundwater contamination found.

The RI proposed soil borings in the underground tank areas, solvent tank farm and caustic/oxidizer tank farms. Plate 1 shows the proposed boring locations. The workplan proposed that the borings would extend below any soil contamination (based on field measurements and observations) or until groundwater or a competent clay layer was encountered. Soil samples would be collected from 5-foot intervals to the full depth of the boring. Monitoring wells were proposed to be installed if groundwater was encountered and contamination was suspected.

Soil screening in the underground tanks and solvent tank farm was proposed with a photoionization detector (PID) and/or an organic vapor analyzer (OVA) for volatile organic compounds. Soil samples exhibiting the highest levels of organics (about two per boring) would be analyzed. Water samples would be collected and analyzed from all wells that contain groundwater.

The samples from the underground tank area were proposed to be analyzed for volatile organics (EPA 8240/624) and glycols. Samples from boring next to a diesel tank would be analyzed for total petroleum hydrocarbons (EPA 418.1). Soil samples from the solvent tank farm area would be analyzed for volatile organics, glycol and extractable organics (EPA 8270/625).

The soil samples from corrosive/oxidizer tank area would be screened by measuring the pH of the soil-water extract. The soil samples (about two per boring) exhibiting unusually low or high pH values would be analyzed for pH and for ion speciation (ion chromatography). Water samples would also be analyzed for pH in the field and ion speciation.

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Samples from the neutralization pit area and railroad spur areas, loading platforms, pipe trench surface, truck pits and freon blending area would be screened for PIT/OVA readings and pH. The samples would be analyzed for pH, ion chromatography, volatile organics, glycols and extractable organics.

The workplan also proposed to install three "deep" wells (50-70 feet deep) in areas where on-site contamination in the Perched Aquifer is unlikely (see Plate 1). These wells were proposed to determine the groundwater flow direction in the Lower Aquifer, upgradient background water quality. Soil samples from these wells would be collected at 5-foot intervals and analyzed for volatile organics, glycols and extractable organics.

HAZARD RANKING (MITRE MODEL)

A HRS package (Mitre model) was prepared by DHS on July 24, 1987 [Doc. 50]. A score of $S_M = 27.13$, $S_{FE} = 0.00$ and $S_{DC} = 0.00$ was assigned to the site. The HRS package did not record release of contaminant into a surface water body. However, release into an unlined ditch from the facility has been reported in the PA [Doc.]. The water use of the ditch is not known. Hence, Tetra Tech cannot determine if this correction will change the S_M score.

OFF-SITE RECONNAISSANCE

Tetra Tech conducted an Off-Site Reconnaissance of the site. The site is located in an industrial land-use area. Adjacent and to the west of the site is an agricultural plot. The site consists of a building which used to serve as a warehouse and an office. It also consists of several aboveground storage tanks. The site is fenced and has restricted access. Parallel to the fence on the north side of the site runs a surface water ditch and a railroad (see sketch). Any requirement for Interim Remedial Measures could not be determined from our survey. Our field observations are recorded on an Off-Site Reconnaissance Report Sheet [Appendix A].

DISCUSSION

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EXTENT OF CONTAMINATION

Chemicals spills and visual signs of contamination in the tank farm areas were reported at the site. McKesson undertook IRMs in an effort to clean up the contaminated soil at the direction of regulatory agencies. However, no soil samples were col-

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lected to determine the extent of the contamination and the success of the IRMs.

In a site investigation conducted by McKesson, significant concentrations of contaminants were detected in the perched groundwater. The soil overlying the water table was visually observed to be contaminated. Odors were also detected. However, no soil samples were collected. Soil samples collected from layers underlying the water table were also contaminated. The contamination seemed to be attenuated with depth of the soil layer. It is not known whether the underlying producing water tables are contaminated.

Visual signs of contamination were also detected in the ditch next to the site. The facility was ordered to characterize and remediate the contamination in 1982. It is not known if this remediation was performed, or whether there were further discharges into the creek after 1982.

The DHS regulatory action on the site, as determined from the files, has been concentrated on the above-ground tank farm areas. The extent and nature of contamination from underground tank farms is not known.

REVIEW OF RI/FS WORKPLAN

The RI/FS Workplan was designed to characterize potential soil and groundwater contamination from the site. The Workplan was submitted to DHS in 1987. DHS should determine if the Workplan has been implemented and review the results of the investigations. Tetra Tech's comments on the Workplan are as follows:

1. The proposed locations of the soil borings and the sampling strategy is acceptable for determining the nature of contamination of the perched groundwater table and overlying soil.
2. Soil samples should be collected from layers underlying the perched water table to determine the vertical extent of contamination.
3. Samples should be collected from the ditch to determine contamination due to illegal discharge.
4. A review of the lists of chemicals stored on-site (Table 1) and properties of the chemical solvents (Appendix A, RI) indicate compounds that may not be identified by the proposed analyses (alcohols and hydrocarbons). Therefore, a Total Petroleum Hydrocarbon analysis (EPA 418.1) may be

APR 12 '89 12:40 TETRA TECH

PAGE.23

Mr. Dennis Dickerson
April 11, 1989
Page 16

performed on the soil samples to determine the total hydrocarbon contamination.

QA/QC REVIEW OF DATA

The site investigation reports submitted by McKesson do not include any QA/QC documentation, including sampling methods and preservation, chain-of-custody forms, and test methods used. Therefore, quality of data is unknown and questions exist about specific analysis. In order to establish the validity of the analytical results, all available QA/QC data and test methods applied should be obtained from McKesson Chemical Company.

CONCLUSIONS

Tetra Tech's observations from the review of available documents on the McKesson Chemical Company site are summarized as follows:

- o There are detectable concentrations of compounds stored on-site in the groundwater, and in the underlying soil strata. Contaminants of soil overlying the water table have been visually confirmed.
- o The adequacy of IRMs is not known. The extent of contamination in the surface channel is unknown.
- o The RI/FS Workplan is generally acceptable.

RECOMMENDATIONS

The McKesson site is an inactive site. A remedial investigation should be conducted to determine the nature and extent of the contamination. Based on the data obtained from the RI, an appropriate site closure process should be determined.

This review has been based on the reports, workplans and other documents made available to us by DHS. We have not made any effort to independently verify any information presented in these documents. If you have any questions regarding this letter, please call me or Tesfai Habte at (818) 449-6400.

Very truly yours,

TETRA TECH, INC.

MCK0018152

Salar D. Niku

APR 12 '89 12:40 TETRA TECH

PAGE.24

MCKESSON LABORATORY GROUP
One Post Street San Francisco CA 94104 Tel 415 983-8300

RECEIVED 11:22 7 1989

McKesson

October 25, 1984

OCT 29 1984

Mr. Jim Smith
California Department of Health Services
Toxic Substances Control Division
Southern California Section
107 S. Broadway, Room 7128
Los Angeles, California 90012

TD-85142

RE: EPA #CAD 060395753

Dear Mr. Smith:

In your letter of October 5, 1984 you requested a number of items from us. These included our immediate clean up of surface and subsurface contamination to the levels specified in the California Assessment Manual (CAM), a site investigation plan, and information on spill incidents and the now removed storage tank.

The standing liquid Ms. Robinson noted in her April 13, 1984 report has been removed. The liquid was a mixture of rainwater, glycols, and glycol ethers, none of which is a CAM identified compound. The results of our analysis of this liquid are summarized in Table I.

When Mr. Landry and I met with Ms. Robinson on October 3, 1984 we advised her that we had already sampled the soil in the solvent dike area but that the results were not yet available. These samples were collected at the 1, 3, and 6 foot depths in each location using a Veihmeyer soil sampler, auger, or pipe as appropriate. All samples were collected, stored, and transported according to EPA-recommended protocol. The location of each soil boring is shown on Figure 1.

The soil samples were analyzed by McKesson Environmental Services, a laboratory certified by DOHS for these analyses. The only CAM identified compound detected was trichloroethylene, and its concentration was only about 14% of the CAM STLC limit. The actual trichloroethylene concentrations are summarized in Table II.

MCK0018153

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PAGE.25

ENCLOSURE 1

(ENCL)

MR. JIM SMITH
OCTOBER 25, 1984
PAGE TWO
TD-85142

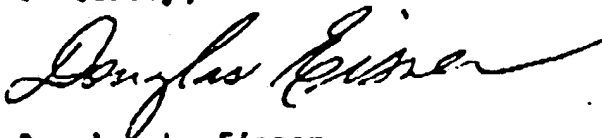
The results presented in Table II and our knowledge that the other CAM compounds are not handled at this facility indicate to us that further investigation and extensive excavation are unwarranted. However, we do plan to place a concrete floor in this storage area. We propose to remove and properly dispose of the upper 12-18 inches of soil and lay a concrete floor. We trust this plan meets with your approval.

Concerning the spill incidents, there has been only one significant incident since the plant was built 10 years ago. In 1979 we released approximately 10,000 gal of sulfuric acid due to a faulty valve. This acid was entirely contained within the corrosive dike and the release was reported as required to the US Coast Guard. We recovered approximately 7000 gal by vacuum, diluted the balance with water, and pumped the more dilute solution to the on-site neutralization pit where it was neutralized. We then twice flooded the soil with a soda ash slurry and pumped that mixture to the neutralization pit. Finally, we replaced the upper 24 inches of soil with virgin fill and rock.

Ms. Robinson also asked about the circumstances surrounding the removal of one storage tank from the solvent storage diked area. This tank contained 37% formaldehyde. In 1982 we moved this tank into the corrosive diked area merely for reasons of chemical compatibility. The tank was not leaking at that time and indeed, is still in service.

We trust this information is satisfactory. Mr. Landry and I would be happy to meet with you and Ms. Robinson to answer any further questions you may have.

Sincerely,



Douglas L. Eisner
Technical Director

DLE:da

cc: L. D. Landry

MCK0018154

APR 12 '89 12:42 TETRA TECH

to St. California Health and Welfare Agency

ATTACHMENT 2

PAGE 26

Department of Health Services
Hazardous Materials Management Section

MEMO OF CALL

FILE: SPILL REPORT

me: Bill Chum Date: 1/6/82
 m: McKesson Chemical Co. Time: 8:29 PM
 address: 9005 Sorenson Ave Person Taking or Making Call: Carmelita E. Lampin
Sta. Fe Springs

Telephone No.: (213) 698 6201

subject: H₂SO₄ spill report

message:

- date, time: 1/5/82 at 1:00 PM
- location: above address within a dike area
- amount spilled: 1500 gals - 22500 lbs
- contained & neutralized
- clean up completed
- United Pumping will haul clean up wastes to
BKK & will be properly manifested
- above facility is not a TSD & only a generator of waste
EPA ID # CAD 060395 753
- H₂SO₄ was not waste before the spill

MCK0018155

REPORT:

Lampin

CITY OF SANTA FE SPRINGS

NOTICE OF VIOLATION
AID
ORDER TO COMPLY

Date April 7, 1980
File I-2430-14

McKESSON CHEMICAL COMPANY - MR. BRIAN BOHRE
Location 9005 S. GREENSBAY AVE, SANTA FE SPRINGS

You are hereby directed to correct the following violations of City
SANTA FE SPRINGS Ordinance No. 562 and/or the conditions and
limitations of Industrial Waste Disposal Permit No. 3785 by April 21
1980.

1. REPAIR THE KEYS SWITCH PUMP AT THE
WASTE HOLDING SUMP.
2. ALL LIQUID WASTE SPILLS IN THE TRAILER
AREA MUST BE CLEAN-UP.
3. INDUSTRIAL WASTEWATER DISCHARGE RECORD
MUST BE KEPT AND AVAILABLE FOR INSPECTION.
4. YARD CATCH BASIN MUST BE FREE OF
INDUSTRIAL WASTE AT ALL TIMES.



COUNTY OF LOS ANGELES
DEPT. OF COUNTY ENGINEER-FACILITIES
SANITATION DIVISION

MCK0018156

JERRY WONG
INDUSTRIAL WASTE ENGINEER INSP.

By [Signature]

APR 12 '89 12:43 TETRA TECH

PAGE.28

MILWAUKEE 7

CITY OF Santa Fe Springs

NOTICE OF VIOLATION

AID

ORDER TO COMPLY

MCK0018157

Date August 27, 1980File I-2130-1H

TO MC KESSON CHEMICAL CO. - ATTENTION: Mr. DON WETSTEAD
Location 9005 S. SORENSEN AVE., SANTA FE SPRINGS

You are hereby directed to correct the following violations of City of Santa Fe Springs Ordinance No. 562 and/or the conditions and limitations of Industrial Waste Disposal Permit No. 385 by SEE BELOW 1980.

DISCHARGING INDUSTRIAL WASTE INTO THE UNLINED DITCH IS A VIOLATION OF THE ABOVE CITY ORDINANCE

YOU ARE HEREBY DIRECTED TO CEASE AND DESIST THE DISCHARGE, AND CLEAN UP THE UNLINED DITCH AT ONCE

YOU ARE ALSO DIRECTED TO SUBMIT A WRITTEN REPORT TO THIS OFFICE BY SEPTEMBER 10, 1980, PROVIDING A COMPLETE DETAILS OF THE ACTION TAKEN TO COMPLY WITH THE ABOVE VIOLATION.

SHOULD YOU HAVE ANY QUESTION, PLEASE CALL ME AT 866-7011 EXTENSION 255 BETWEEN THE HOURS 8-9 A.M. WEEKDAYS. (818) 574-0962

DEPT. OF COUNTY ENGINEER
SEWERTATION DIVISION
16623 BELFLOWER BLVD.

By [Signature]

APR 12 '89 12:44 TETRA TECH

PAGE 29

ATTACHMENT 5

STATE OF CALIFORNIA - HEALTH AND WELFARE AGENCY

George Deukrejian, Com

DEPARTMENT OF HEALTH SERVICES

197 SOUTH BROADWAY, ROOM 7128
LOS ANGELES, CA 90012

(213) 620-2380

FACILITY INSPECTION REPORT

Reinspection 7-3-89
Date of Inspection: 4/13/89

PA I.D. # CA0060395753

Inspector's Name: Megan Robinson

| City | Name/Address | Mailing Address | Ownership |
|-------------|--|--|--|
| Los Angeles | McKesson Chem Division 9005 Sorenson Ave. SANTA FE SPRING, Ca 90670 | McKesson Chemical Division 1 Post Street San Francisco Ca 94104 | SA ME Property lease Harvey Sor Kim Samir Moslin, Paul Moslin, Joe Sor |

| County | Type of business: | Persons present |
|-------------|-------------------|-----------------|
| Los Angeles | | Bill R. Crumm |

Contact Person Bill Westro

Phone: (213) 946-8555

Samples taken: Yes (receipt attached) No Avg. Gen. Rate (monthly):

Plan of Correction necessary: Yes (Due date:) No

Discussion with Management:

Sample soil in diked sulphuric acid tank farm submit analysis to Dept. for hazardous determination. No free standing liquid material should be in the tank farm areas unless actively pumping to reduce vapor water volume. No hazardous waste material should be stock in the tank farm areas. Should be disposed as a hazardous waste. If Carbon treatment is to be used, proper notification to the Dept. Permit Section is required. Adequate aisle space is required for product drum storage. Within 15 days those issued detailed on the NOV shall be corrected + for written proof to the Dept. Enforcement Section

Facility operating under ISD? Yes ☒ No

On this date an inspection of your facility was conducted under authority of Section 25185, California Health & Safety Code and Section 66328, California Administrative Code. The collection of samples or other evidence, including the taking of photographs, was done under authority of Section 66328, California Administrative Code. Specific violations of one or more Sections of California Health & Safety Code, Division 20; California Administrative Code, Title 22; or Code of Federal Regulations, Part 40 are noted on the attached document. These violations relate to the generation, storage, handling, transportation, and/or disposal of hazardous and extremely hazardous waste.

Authorized Representative of Firm*

Name

Authorized State Agent

Name Megan L. Robinson

Signature

MCK0018158

TABLE I. ANALYSIS OF STANDING LIQUID

| <u>CHEMICAL COMPOUND</u> | <u>COMMON NAME</u> | <u>CONCENTRATION,</u> <u>.. ppm</u> |
|---------------------------------|-------------------------|--|
| 2-Butoxy Ethanol | Butyl Cellosolve | 2,700 |
| 2-Methyl-2,4-pentanediol | Hexylene Glycol | 1,100 |
| Oxybis Ethanol | Diethylene Glycol | 11,000 |
| Butoxyethoxy Ethanol | Butyl Carbitol | 9,400 |
| 2-Phenoxy Ethanol | None | 2,300 |
| [Ethanedyl bis(oxy)]bis-ethanol | None | 23,000 |
| Methoxyethoxy Ethanol Acetate | Methyl Carbitol Acetate | 110 |
| Phenoxyethoxy Ethanol | None | 1,500 |

Unknowns were detected at scan numbers of 338, 360 and 461 with a total concentration estimated to be 2,400 ppm.

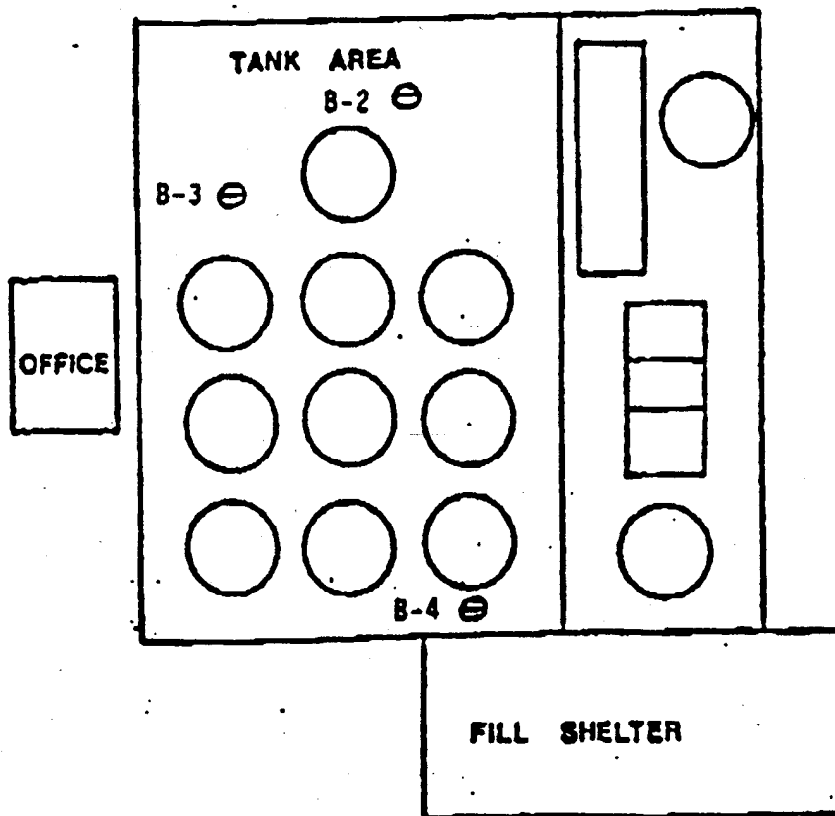
MCK0018159

APR 12 '89 12:45 TETRA TECH

PAGE 31
ATTACHMENT 7

RAILROAD SPIR

GENERAL REGIONAL
GROUNDWATER FLOW



LEGEND

⊖ BORING

NOT TO SCALE

MCK0018160

McKesson Chemical Company Site Plan

Plate - 2

APR 12 '89 12:46 TETRA TECH

PAGE.32

ATTACHMENT 8

TABLE II. TRICHLOROETHYLENE CONCENTRATIONSTRICHLOROETHYLENE CONCENTRATION, ppm

| BORING 2 | | | BORING 3 | | | BORING 4 | | | BORING 5 |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <u>1 ft</u> | <u>3 ft</u> | <u>6 ft</u> | <u>1 ft</u> | <u>3 ft</u> | <u>6 ft</u> | <u>1 ft</u> | <u>3 ft</u> | <u>6 ft</u> | <u>3 ft</u> |
| nd | 4.0 | 0.03 | nd | nd | 0.07 | nd | 33.0 | nd | 0.008 |

"nd" means not detected above a detection limit of 0.100 - 1.00ppm

MCK0018161

APR 12 '89 12:46 TETRA TECH

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ATTACHMENT 9

Casey Conference 901 22 116

Analytical Results
McKesson Technical Services

McKesson
7164-QD

Date Received: 10/11/84
Date Reported: 10/29/84

| Lab No.: | 17143 | 17144 | 17145 | 17146 | 17147 | DETECTION |
|--------------|-------|-------|-------|-------|-------|-----------|
| Sample I.D.: | 1A | 1B - | 2A | 2B | 3A | LIMITS |
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| 88 | | | | | | |

| <u>Compound</u> | <u>Concentration in ug/L</u> |
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| -BHC | ND | ND | ND | ND | ND | 0.26 |
|------|----|----|----|----|----|------|

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|--------|----|----|----|----|----|------|
| Endrin | ND | ND | ND | ND | ND | 0.26 |
|--------|----|----|----|----|----|------|

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|----------|----|----|----|----|----|----|
| oxaphene | ND | ND | ND | ND | ND | 12 |
|----------|----|----|----|----|----|----|

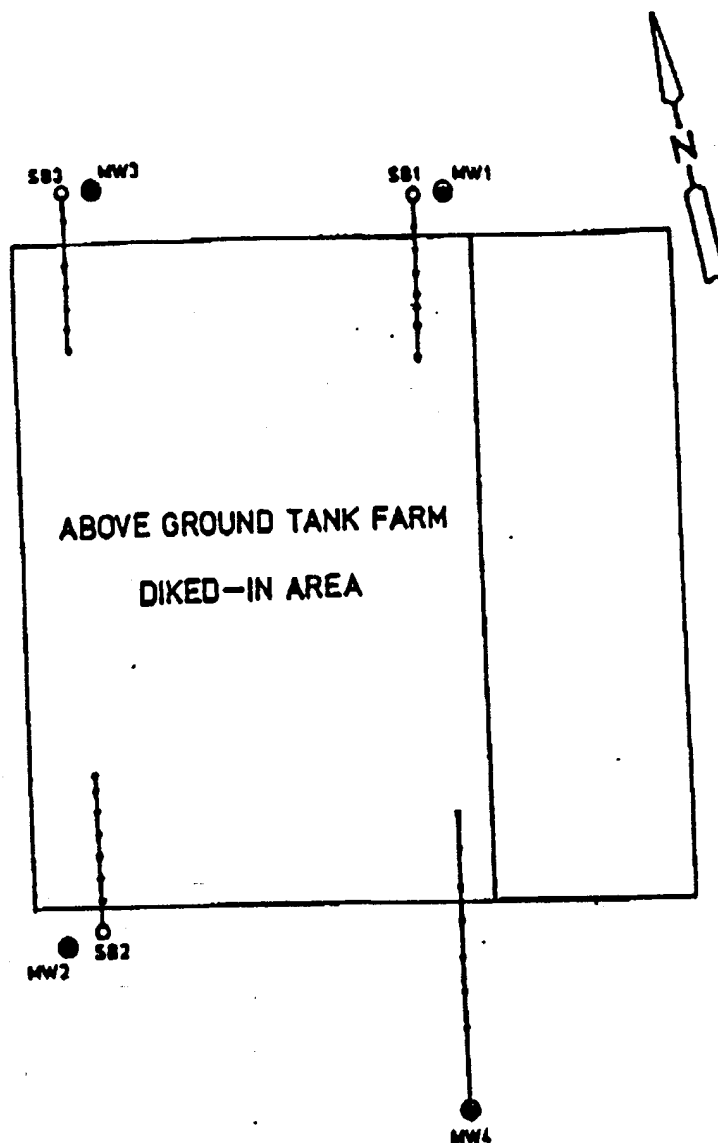
ND = Not Detected

W. W. Flynn, Laboratory Manager

MCK0018162

CERTIFICATION OF REPRESENTATIVE SAMPLE OR SAMPLE INTEGRITY IS NOT
MADE BY McKESSON ENVIRONMENTAL SERVICES (MES) FOR SAMPLES NOT TAKEN
BY MES.




ATTACHMENT 10



0 10 20 30
SCALE (FEET)

MCK0018163

LEGEND

-  SLANT SOIL BORING AT 25° ANGLE AND ASSOCIATED SAMPLING POINTS
-  GROUNDWATER MONITORING WELL
-  SLANT MONITORING WELL AT 45° ANGLE AND SAMPLING POINTS

LOCATION MAP OF BORINGS AND WELLS AT McKESSON CHEMICAL
COMPANY'S SANTA FE SPRING FACILITY

ATTACHMENT II

TABLE 3.1. INVENTORY OF WATER WELLS

| Well Owner | Well No. | State Well No. | Well Depth (ft) | Average Water Elevation (ft) | Ground Surface Elevation (ft) |
|---|----------|----------------|-----------------|------------------------------|---|
| La Habra Heights County Water District | 1 | 2S/11W-19M01 | 728 | 102 | ^{121m 4' 10"} 57 160 |
| | 2 | 2S/11W-19F03 | 637 | NR | NR |
| | 3 | 2S/11W-19M04 | 347 | NR | NR |
| | 4 | 2S/11W-19F01 | 650 | NR | NR |
| LGG Family Trust | 5 * | 2S/11W-29E05 | 70 | 112 | ⁴⁴ 156 |
| Little Lake Cemetery | 6 | 3S/11W-06N01 | 650 | NR | 128 |
| Mutual Water Owners Association of Los Nietos | 7 * | 2S/11W-30Q05 | NA | NA | NA |
| City of Pico Rivera | 8 | 2S/12W-25M01 | 514 | NR | NR |
| | 9 | 2S/12W-25E13 | 500 | NR | NR |
| | 10 | 2S/12W-25G01 | 520 | 102 | 155 |
| | 11 | 2S/12W-25G02 | 468 | NR | NR |
| | 12 | 2S/12W-36M06 | 630 | NR | NR |
| Pico Water District | 13 | 2S/12W-24E06 | 414 | NR | 166 |
| | 14 | 2S/12W-25E10 | 380 | NR | NR |
| City of Santa Fe Springs | 15 * | 2S/11W-30R03 | 984 | 68 | ⁸⁵ 153 |
| | 16 | 2S/12W-25Q05 | 518 | NR | 147 |
| | 17 | 3S/11W-06D03 | 780 | NR | NR |
| | 18 | 3S/12W-01F08 | 1052 | NR | NR |
| Southern California Water Company | 19 | 3S/12W-02R01 | 391 | NR | 118 |
| Whittier Union High School | 20 | 2S/11W-32J04 | NA | NA | NA |
| | 21 | 3S/11W-03C01 | 836 | NR | 154 |

* = Wells located within one-mile radius of McKesson's property

NR = No Record

NA = Not Available

MCK0018164

ATTACHMENT 12



APR 12 '89 12:50 TETRA TECH

PAGE.37

ATTACHMENT 13

TABLE 3.2. RESULTS OF ORGANIC CHEMICAL ANALYSES
CENTRAL BASIN WATER ASSOCIATION

| Owner | Well No. | Sample Date | Constituent | Concentration (ug/l) |
|--|--------------|-------------|------------------------|----------------------|
| La Habra Heights Co. Water District | 2S/11W-19M01 | 9/05/85 | Tetrachloroethene | 1.5 |
| | | 9/05/85 | Trichloroethene | 0.6 |
| | | 9/05/85 | Atrazine | 1.2 |
| | | 10/29/85 | Dibromochloromethane * | 1.0 |
| | | 10/29/85 | Tetrachloroethene * | 1.7 |
| | | 10/29/85 | Trichloroethene * | 0.5 |
| | | 10/29/85 | Atrazine * | 0.9 |
| La Habra Heights Co. Water District | 2S/11W-19F03 | 9/05/85 | Atrazine | 1.2 |
| | | 10/29/85 | Atrazine * | 1.0 |
| | | 10/29/85 | Simazine * | 0.6 |
| City of Pico Rivera | 2S/12W-25G01 | 9/26/85 | Atrazine | 1.6 |
| | | 9/26/85 | Simazine | 1.0 |
| | | 10/29/85 | Atrazine * | 1.5 |
| | | 10/29/85 | Simazine * | 1.0 |
| City of Pico Rivera | 2S/12W-36M06 | 9/26/85 | Tetrachloroethene | 1.2 |
| | | 9/26/85 | Trichloroethene | 1.7 |
| | | 10/29/85 | Tetrachloroethene * | 0.8 |
| | | 10/29/85 | Atrazine * | 0.7 |
| City of Santa Fe Springs | 2S/11W-30R03 | 9/10/85 | Trichloroethene | 1.1 |
| | | 10/29/85 | Trichloroethene * | 1.0 |

* = Retest of original sample. Required if initial analyses indicated some detectable quantity of an organic constituent.

MCK0018166

APR 12 '89 12:50 TETRA TECH

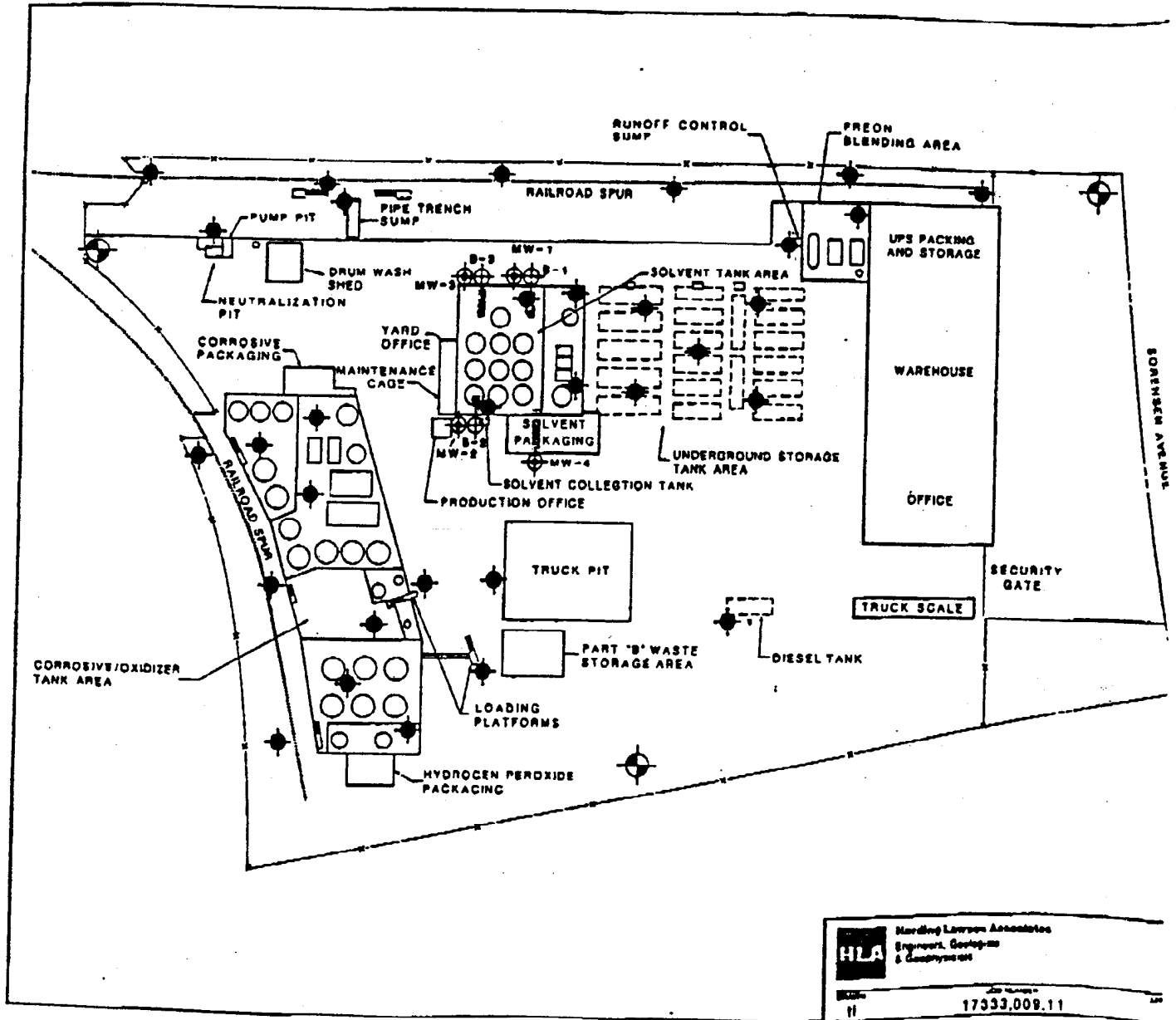
PAGE.38

ATTACHMENT 14

TABLE 6.1. SUMMARY OF UNDERGROUND STORAGE TANK INVENTORY

| Tank | Product | Capacity (gallons) | Construction | Year Installed |
|--------|------------------|-----------------------|--------------|-------------------|
| D205 A | MEK | 20,148 | Steel | 1976 |
| D202 B | IPA | 20,148 | Steel | 1976 |
| D203 C | Methanol | 20,148 | Steel | 1976 |
| D204 D | IPA/MEK | 20,148 | Steel | 1976 |
| D201 E | Acetone | 20,148 | Steel | 1976 |
| D212 F | Heptane | 9,942 | Steel | 1976 |
| D211 G | MCK SOLV VM & P | 9,942 | Steel | 1976 |
| D210 H | Toluene | 9,942 | Steel | 1976 |
| D209 I | Xylene | 9,942 | Steel | 1976 |
| D208 J | MCK SOLV 140F | 9,942 | Steel | 1976 |
| D206 K | Glycol Ether EB | 9,942 | Steel | 1976 |
| D401 L | (Empty) | 9,942 | Steel | 1976 |
| D402 M | (Empty) | 9,942 | Steel | 1976 |
| D403 N | (Empty) | 9,942 | Steel | 1981 |
| D404 O | (Empty) | 9,942 | Steel | 1981 |
| D404 P | (Empty) | 9,942 | Steel | 1981 |
| D404 Q | (Empty) | 9,942 | Steel | 1981 |
| D402 R | Acetone | 9,942 | Steel | 1981 |
| D402 S | (Empty) | 9,942 | Steel | 1981 |
| D216 T | Diesel | 7,000 | Steel | Unknown |
| D215 O | Chemical Waste | 1,000 | Steel | 1981 |
| D213 | Stoddard Solvent | 10,000 | Steel | Unknown |
| D214 | Methanol Hexane | 10,000 | Steel | Unknown |

MCK0018167



HLA Harding Lawson Associates
Engineers, Architects
& Constructors

17333.009.11

Attachment 14

Harding Lawson Associates

December 4, 1990

17333,149.11



McKesson Corporation
One Post Street - 28th Floor
San Francisco, California 94104

Attention: Ms. Jean Mescher

Ladies and Gentlemen:

Summary of Results and Proposed Additional Work
Remedial Investigation/Feasibility Study
McKesson Corporation Facility
Santa Fe Springs, California

INTRODUCTION

This letter provides a summary of the results of Harding Lawson Associates' (HLA) subsurface investigation at the McKesson Corporation facility in Santa Fe Springs, California, and our recommendations for additional work. This letter was written in response to the California Department of Health Services' request during a meeting on November 9, 1990.

SUBSURFACE INVESTIGATION

Scope of Work

The original scope of work for the remedial investigation subsurface exploration consisted of three lower aquifer, continuously cored, monitoring wells that were to be cased off from a perched-water zone identified during investigative work conducted by McKesson Environmental Services. Additionally, 31 shallow borings, of which an estimated 15 were to be converted to perched-zone monitoring wells, were to be drilled to assess soil and ground-water conditions in eight areas of concern at the site.

Work Performed

The subsurface investigation began on June 12, 1990, with continuous coring of lower aquifer monitoring Wells MW-1 through MW-3 at the locations illustrated on Plate 1. Perched water was not encountered during continuous coring, bucket-auger enlargement of the borehole, or installation of the conductor casing at these locations.

Subsequently, 28 borings were drilled with total depths of 40 to 65 feet at the locations illustrated on Plate 1. Eight of these borings were converted to lower aquifer monitoring wells because perched water was not encountered at those locations. Perched water was

December 4, 1990
17333,149.11
Ms. Jean Mescher
McKesson Corporation
Page 2

encountered only in the northeast corner of the site; Monitoring Well SB-32 was installed there, to a total depth of approximately 40 feet, to assess the perched-water conditions.

ANALYTICAL TESTING

Soil and ground-water samples were submitted to Analytical Technologies, Inc. (ATI, San Diego, California), under chain-of-custody protocol. Soil samples collected from the neutralization pit area, runoff control sump area, railroad spurs, loading areas, pipe trench sump, and truck pit areas were submitted for the following analyses: (1) volatile organic compounds (VOC) by EPA Method 8240, (2) semivolatile organics by EPA Method 8270, (3) selected glycols by EPA Method 8015, (4) total petroleum hydrocarbons (TPH) by EPA Method 418.1, (5) pH by EPA Method 9045, and (6) selected ions by EPA Method 300/6010. All ground-water samples were submitted for the above suite of analyses.

Soil samples collected from the underground storage tank area, aboveground solvent storage area, and Freon blending area were submitted for analysis of VOCs and semivolatile organics by EPA Methods 8240 and 8270, respectively. Soil samples collected from the corrosive and hydrogen peroxide storage areas were submitted for analysis of selected ions and pH.

RESULTS TO DATE

Regional Geology and Hydrogeology

The site is situated on fine-grained exposures of the late Pleistocene Lakewood Formation. The Gage Aquifer underlies these fine-grained deposits and comprises the basal subunit of the Lakewood Formation. An unconformity separates the Lakewood from the underlying San Pedro Formation (of early Pleistocene age). The San Pedro Formation consists of a number of aquitards and aquifers. In downward succession, the aquifers are named the Hollydale, Jefferson, Lynwood, Silverado, and Sunnyside. Regional ground-water flow is generally to the south-southwest.

Site Geology and Hydrogeology

Shallow, near-surface material underlying the site consists predominantly of silty sand, with minor amounts of silt and clay. Poorly sorted, fine- to coarse-grained sand (locally with gravel) underlies these fine-grained surficial deposits from depths between 15 and 25 to 30 feet below grade. These sand deposits (informally named the upper sand zone) appear to form a northwest-southeast trending channel feature that bisects the site. This upper sand zone is interpreted to be the Gage Aquifer, which was dry during our investigation (except in the northeast property corner).

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Ms. Jean Mescher
McKesson Corporation
Page 3

Below the upper sand zone are silt, clay, and silty sand to depths of approximately 45 feet. Interpretive geologic cross sections are presented on Plates 2 through 5. Cross-section lines are depicted on the site plan (Plate 1). Between depths of 45 and 70 feet (maximum depth explored), a fine- to medium-grained sand is present. Ground water was encountered at depths between 48 and 50 feet below ground surface during drilling. The water-bearing lower aquifer sand appears to be the Hollydale Aquifer (uppermost aquifer of the San Pedro Formation). Ground-water flow direction was to the southwest at a gradient of 0.005 foot per foot during August 1990.

Soil Analytical Results

Soil assessment within the corrosive and hydrogen peroxide storage areas revealed that elevated sodium levels were detected in Boring SB-18 (at 1.5 feet below grade), which is located near the sodium hydroxide storage tank, and low pH values were detected in Boring SB-16 at 6 feet and SB-17 at 1.5 feet. Field screening of soil pH indicated that pH values returned to normal by 15 feet and 5 feet in depth for Borings SB-16 and SB-17, respectively. Therefore, any impact to soil quality by releases within the corrosive storage area appears to be shallow and localized in the area of our investigation. Ponded water and aboveground storage tanks restricted our investigation in the southern portion of this containment area; additional work will be necessary to evaluate the northern portions.

Selected glycols (propylene, ethylene, hexylene, and diethylene) were not detected in the soil at the locations of our investigation. Soil impacted by TPH was detected locally in the vicinity of Borings SB-24 and SB-30.

The semivolatile organics 2-methyl naphthalene, naphthalene, and/or benzyl alcohol were detected at low levels in Borings SB-24 and SB-30. Semivolatile organics were not detected in any other borings during this investigation.

Soil isoconcentration maps depicting the VOC constituents 1,1,1-trichloroethane (TCA), tetrachloroethene (PCE), trichloroethene (TCE), and methylene chloride are illustrated on Plates 6 through 9. The data shown are for two depth intervals (20 to 25 feet and 40 to 45 feet).

In summary, soils impacted from previous site usage appear to be localized in the area near the aboveground solvent storage area.

Ground-Water Analytical Results

Ground-water isoconcentration maps depicting the distribution of TCA, PCE, TCE, and methylene chloride are illustrated on Plates 10 through 13. In summary, the upgradient and

December 4, 1990
17333,149.11
Ms. Jean Mescher
McKesson Corporation
Page 4

downgradient extent of ground water containing these constituents cannot be assessed with the existing data; therefore, additional work is proposed.

PROPOSED WORK

Based on the results of this subsurface investigative phase, the following work is proposed at the locations illustrated on Plate 14:

- Three shallow, approximately 15-foot-deep, soil borings (SB-33 through SB-35) will be drilled within the northern portions of the corrosive storage area after the aboveground storage tanks have been removed to allow access.
- Three, approximately 50-foot-deep, soil borings (SB-36 through SB-38) will be drilled to assess the lateral and/or vertical distribution of VOCs proximal to the aboveground solvents storage area. The boring drilled along the northern property perimeter (SB-36) will be converted to a 65-foot-deep ground-water monitoring well to help evaluate the upgradient extent of VOCs in ground water.
- Cluster wells will be installed at two locations. The cluster wells (SB-17A, SB-17B, SB-23A, and SB-23B) will be teamed with existing Wells SB-17 and SB-23, and will be used to evaluate the potential for stratification of VOCs within the lower aquifer. The deep well at each location will be continuously cored to the base of the aquifer. The boreholes will be converted to monitoring wells. Depending on the depth to the base of the aquifer, an intermediate-depth well will be installed to monitor ground-water quality near the middle of the aquifer.
- All newly installed wells will be developed and sampled, and samples will be analyzed for VOCs by EPA Method 8240. Samples from selected wells will also be analyzed for general mineral character using EPA Method 300/6010.
- Backhoe trenching will be conducted along distribution lines that connect the northern rail spur with the aboveground solvent storage area to evaluate the potential for additional solvent source locations.
- Cone penetrometer test (CPT) equipment will be used off site, to the southwest, to help evaluate the downgradient extent of VOCs in the lower aquifer and to provide lithologic information to assess depth to the base of the aquifer. Ground-water sampling by a hydropunch in each CPT probe hole will be conducted at depths similar to depths of screened intervals in the above-referenced cluster wells to provide correlation of hydropunch and monitoring well ground-water analytical results. CPT locations will be determined after the results of the additional on-site investigation.

December 4, 1990
17333,149.11
Ms. Jean Mescher
McKesson Corporation
Page 5


This scope of work will be performed to assess the above-stated objectives. The need for any additional work required to complete the remedial investigation will be determined after the results of presently planned work are reviewed.

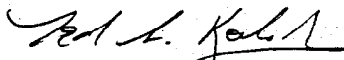
CLOSURE

We trust that this is the information you require at this time. Please call either of the undersigned if you have any questions or comments.

Very truly yours,

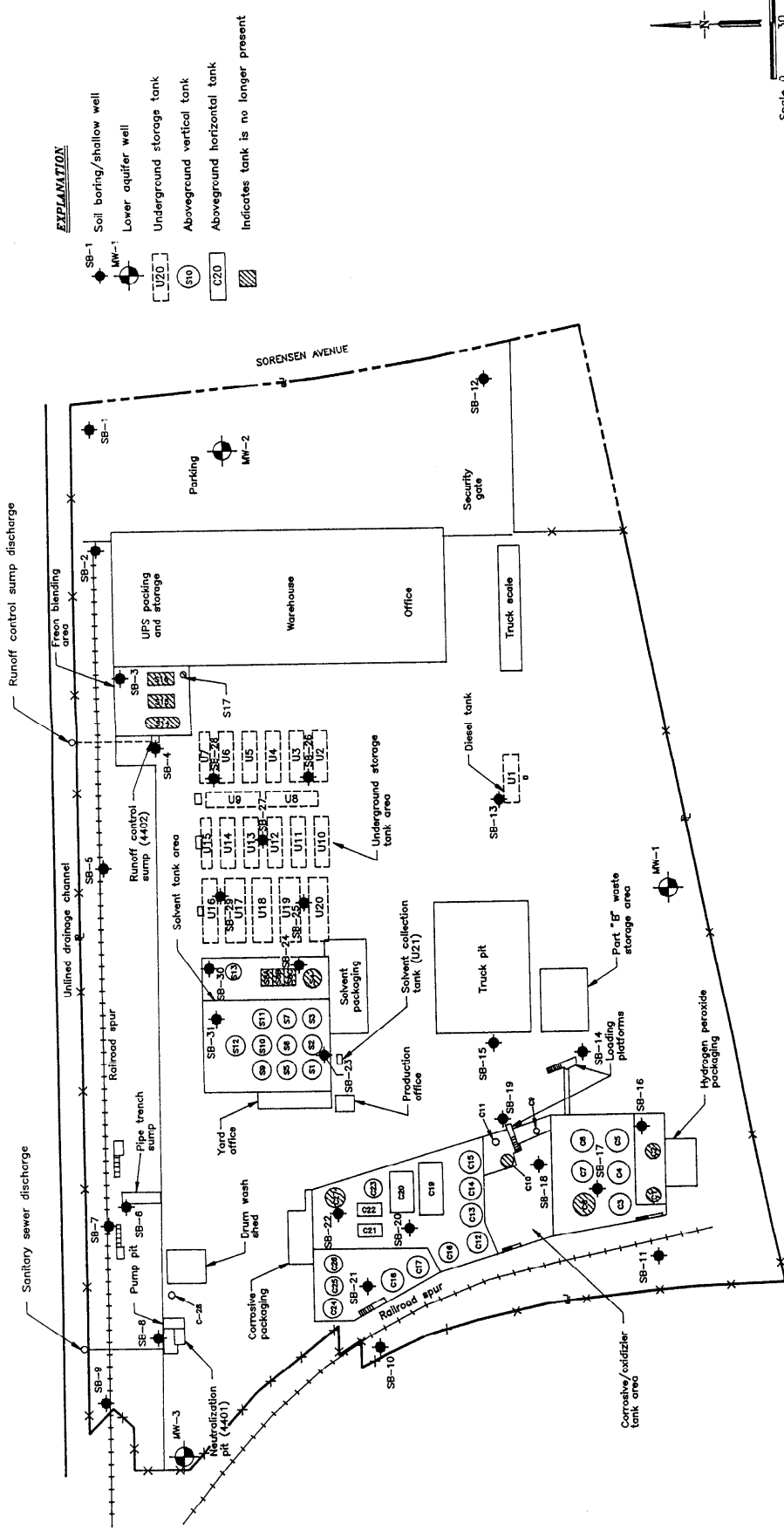
HARDING LAWSON ASSOCIATES


Burton Chadwick
Project Geologist


Ted A. Koelsch, RG 4741
Associate Geologist

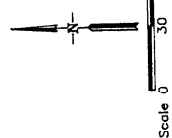
BC/TAK/DWQ/da
[90MCK037.RPT]

Attachments: Plates 1 through 14



EXPLANATION

- SB-1 Soil boring/shallow well
- MW-1 Lower aquifer well
- U20 Underground storage tank
- U10 Aboveground vertical tank
- C20 Aboveground horizontal tank
- Indicates tank is no longer present



MCK0012074

PLATE

1

SITE PLAN

McKesson Corporation Property
Santa Fe Springs, California

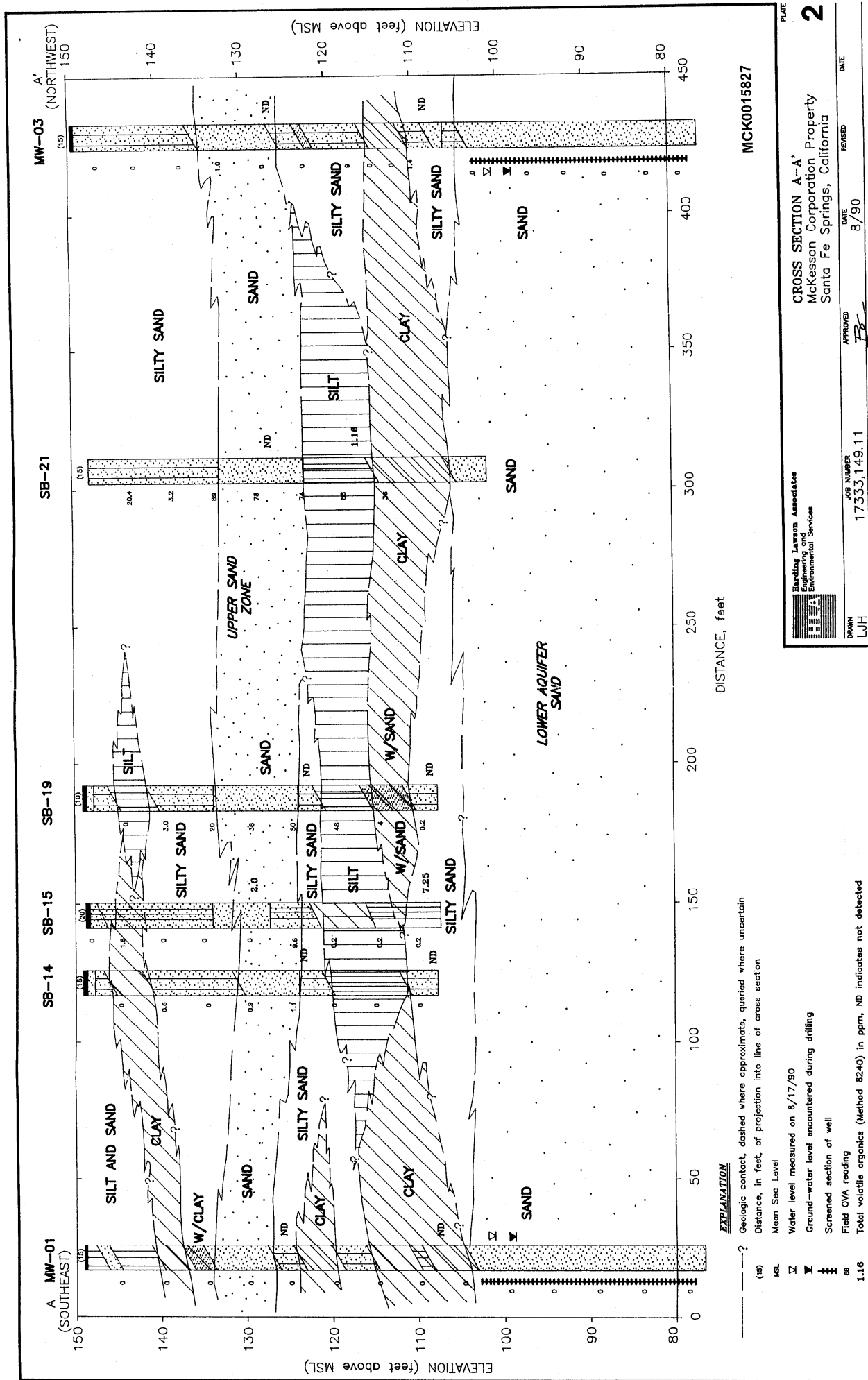
Harding Lawson Associates
Engineers and Geoscientists

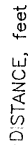


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| BC | 12/89 | BC | 7/90 |
| DRAWN | JUH | JOB NUMBER | 17333,149.11 |

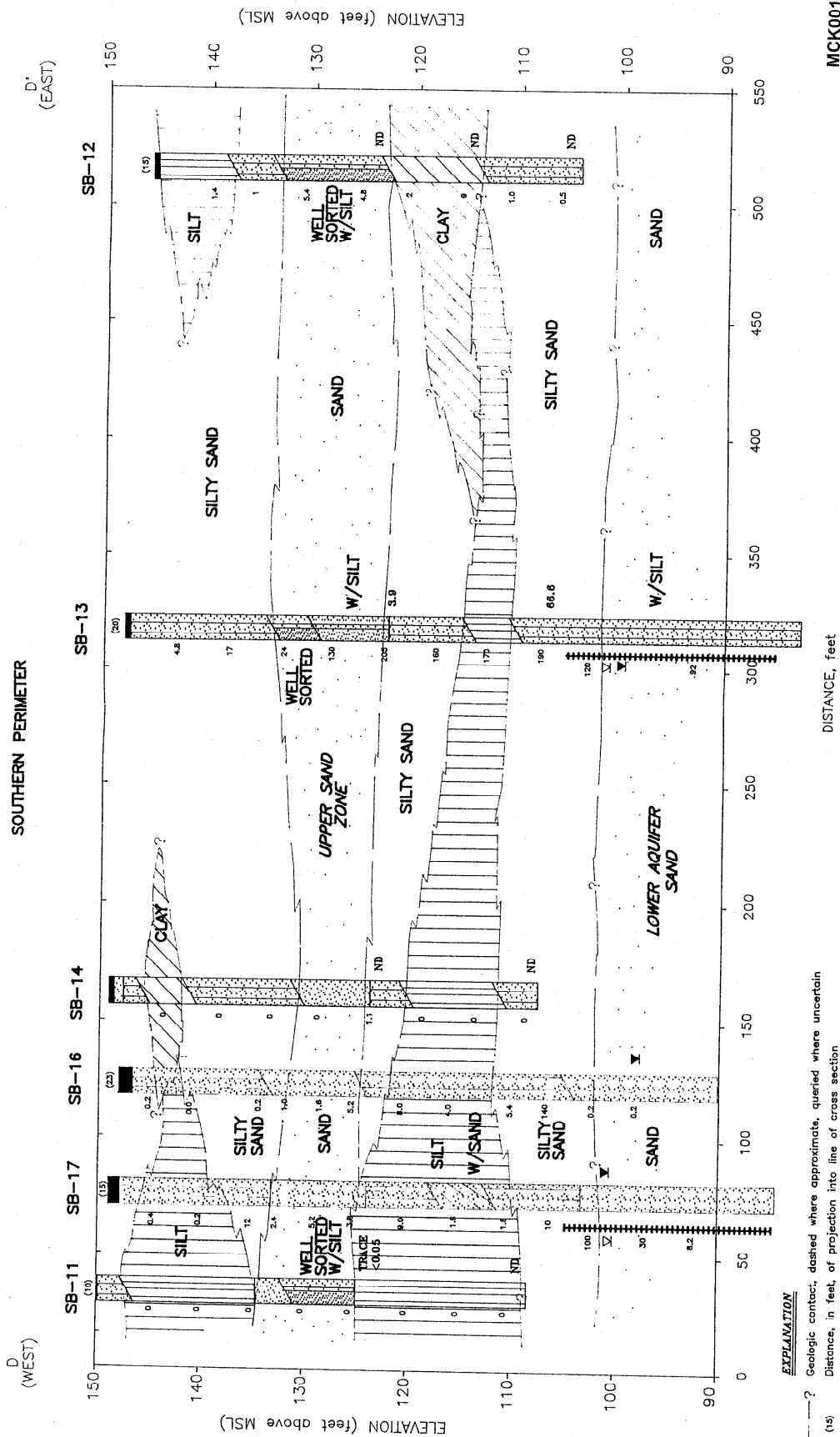
Reference: Facility map provided by McKesson Corporation, undated

MK097165





MCK0015927



EXPLANATION

Geologic contact, dashed where approximate, queried where uncertain
Distance, in feet, of projection into line of cross section

[illegible]

Mean Sea Level

Water level measured on 8/17/90

Ground-water level encountered during drilling

Screened section of well

Field OVA reading

Total volatile organics (Method 8240) in ppm, ND indicates not detected

Harding Lawson Associates
Engineering and
Environmental Services

CROSS SECTION D-D'
McKesson Corporation Property
Santa Fe Springs, California

| | | | |
|----------|------|---------|-------|
| APPROVED | DATE | REVISED | DATE |
| BC | 8/90 | BC | 11/90 |

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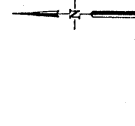
ANGELES CHEMICAL COMPANY

SOUTHERN PACIFIC RAILROAD

EXPLANATION

- SB-1 Soil boring
- MT-1 Lower aquifer well
- SB-4 Perched zone monitoring well
- SB-32 Surface water sample location
- SW-01 PCE concentration at 20 to 25 feet in parts per million (ppm)
- [0.00] PCE concentration at 40 to 45 feet in ppm
- (0.00) PCE concentration at 20 to 25 feet in ppm
- 500 PCE isoconcentration contour at 20 to 25 feet in ppm
- 50 PCE isoconcentration contour at 40 to 45 feet in ppm
- [U20] Underground storage tank
- (U10) Aboveground vertical tank
- C20 Aboveground horizontal tank
- Indicates tank is no longer present

MCK0015924



Scale 0 30 60 feet

Reference: Facility map provided by McKesson Corporation, undated

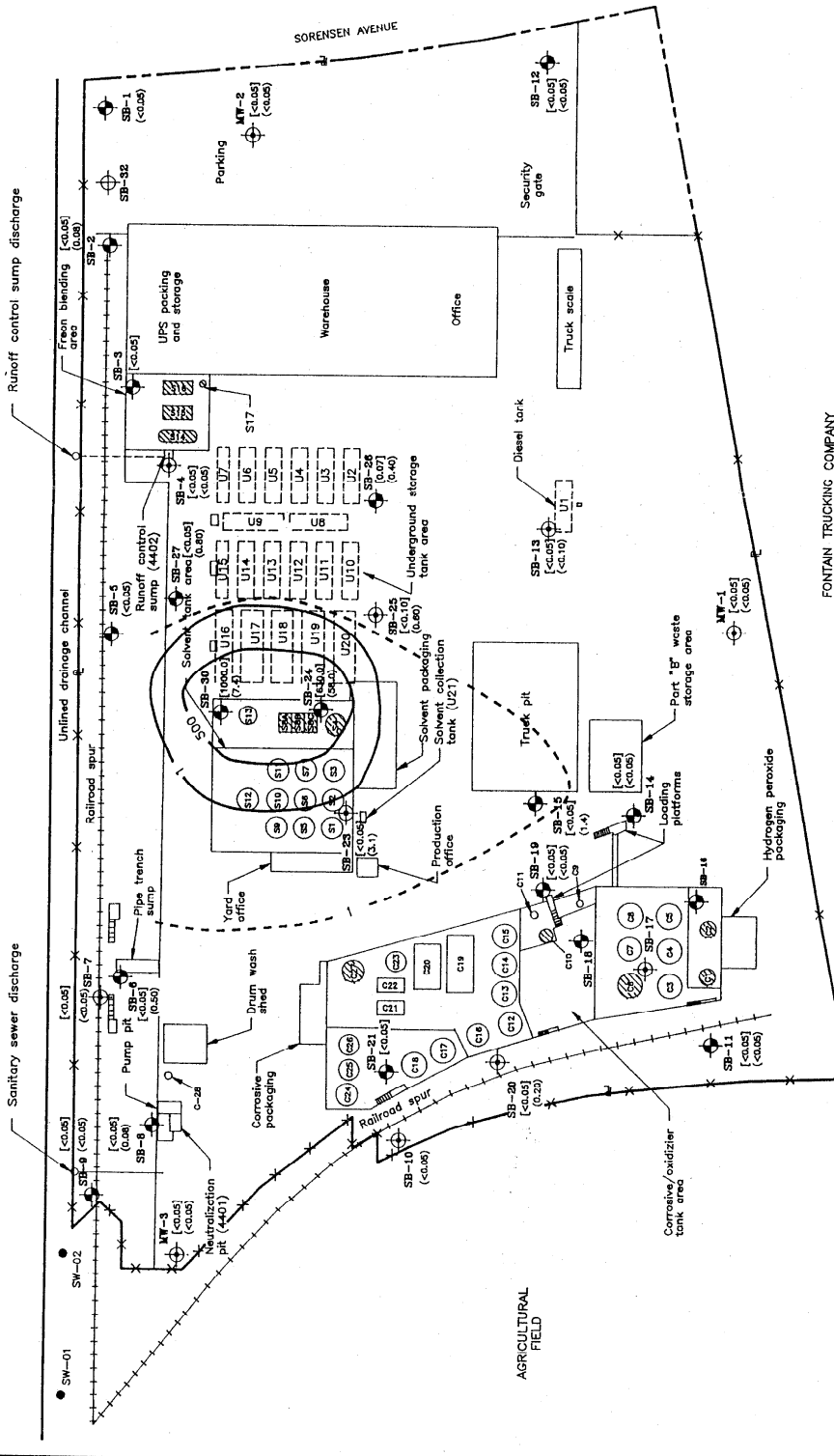
Harding Lawson Associates
Engineers and Geoscientists

PCE SOIL ISOCONCENTRATION MAP
McKesson Corporation Property
Santa Fe Springs, California

DATE 12/89
JOB NUMBER 17533.149.11
APPROVED [Signature]
DRAWN LWH

DATE 11/90
REVISION [Signature]

PLATE 7



FONTAIN TRUCKING COMPANY

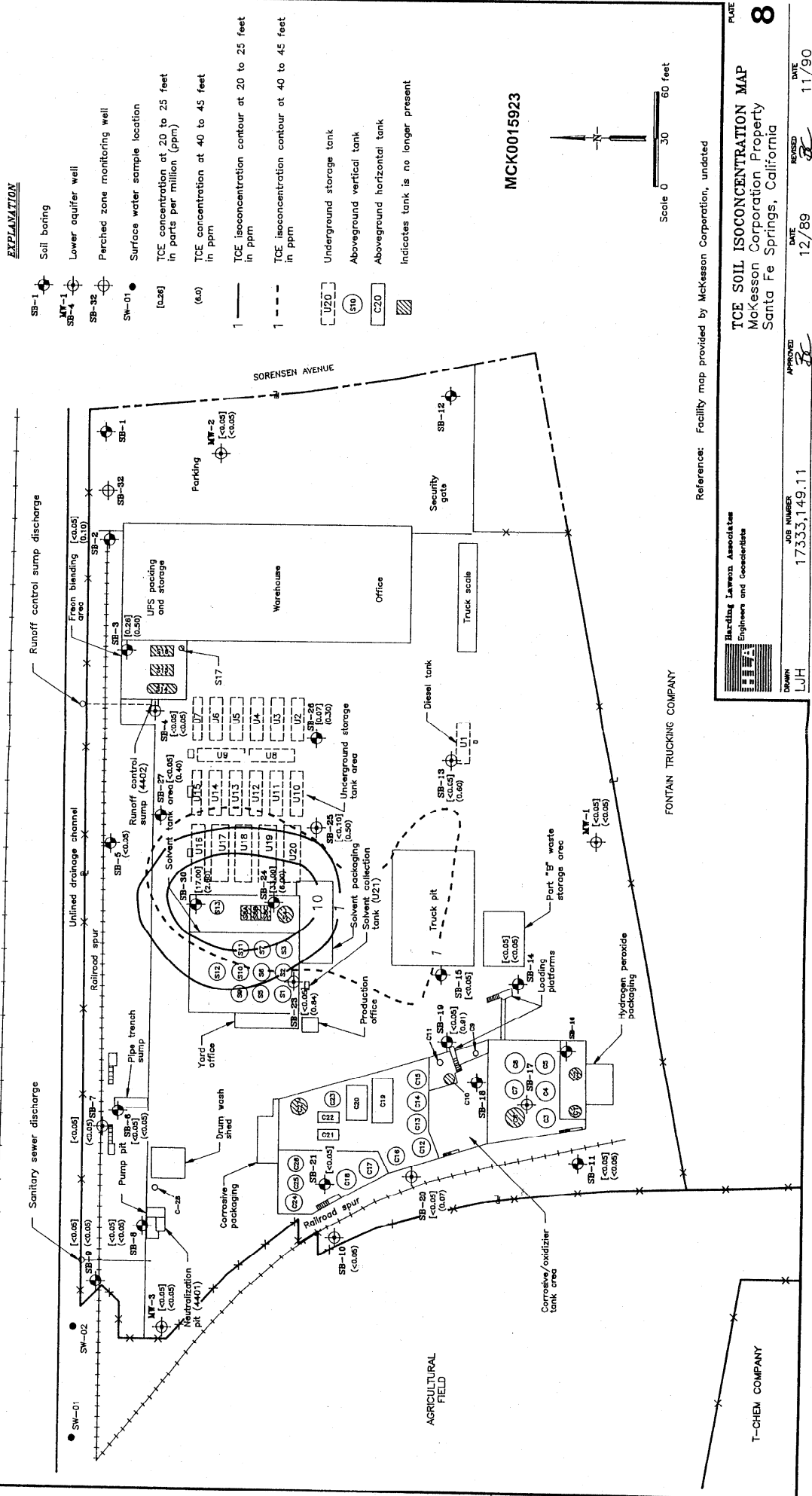
T-CHEM COMPANY

AGRICULTURAL FIELD

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ANGELES CHEMICAL COMPANY

SOUTHERN PACIFIC RAILROAD



EXPLANATION

- SB-1 Soil boring
- MT-1 Lower aquifer well
- SB-4 Perched zone monitoring well
- SB-32 Surface water sample location
- SW-01 TCE concentration at 20 to 25 feet in parts per million (ppm)
- [0.20] TCE concentration at 40 to 45 feet in ppm
- (0.40) TCE concentration at 20 to 25 feet in ppm
- 1 TCE isoconcentration contour at 20 to 25 feet in ppm
- 1 TCE isoconcentration contour at 40 to 45 feet in ppm
- [U20] Underground storage tank
- (U) Aboveground vertical tank
- (C20) Aboveground horizontal tank
- Indicates tank is no longer present

MCK0015923

Scale 0 30 60 feet

Reference: Facility map provided by McKesson Corporation, undated

Birding Lawton Associates
Engineers and Geoscientists

TCE SOIL ISOCONCENTRATION MAP
McKesson Corporation Property
Santa Fe Springs, California

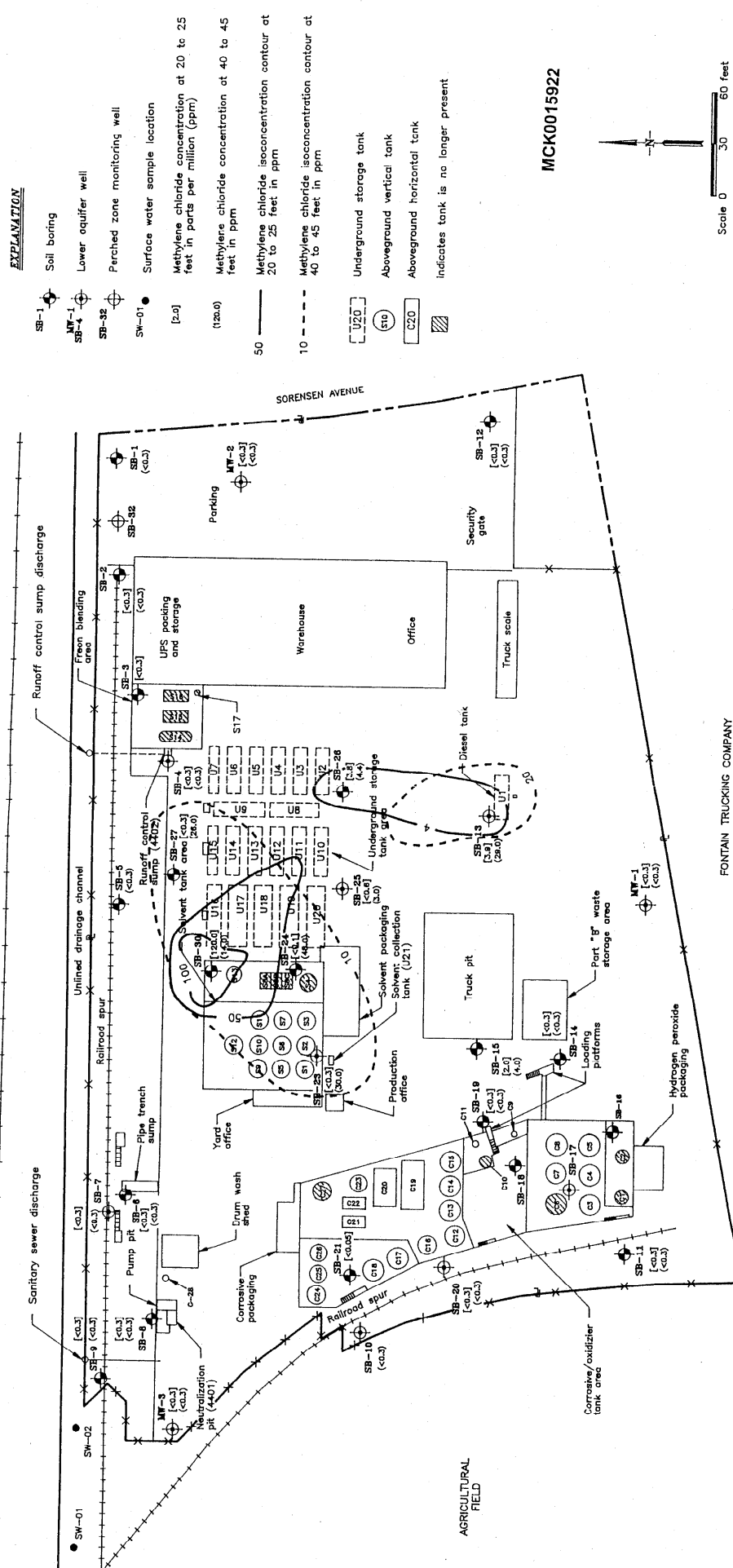
APPROVED: *[Signature]* DATE: 12/89
JOB NUMBER: 17333149.11
DRAWN: LJH

T-CHEM COMPANY

PLATE 8

ANGELES CHEMICAL COMPANY

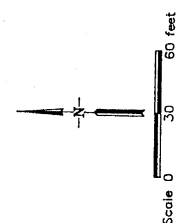
SOUTHERN PACIFIC RAILROAD



EXPLANATION

- SB-1 Soil boring
- SB-2 Lower aquifer well
- SB-3 Perched zone monitoring well
- SB-4 Surface water sample location
- SW-01 Methylen chloride concentration at 20 to 25 feet in parts per million (ppm)
- (20) Methylen chloride concentration at 40 to 45 feet in ppm
- (120) Methylen chloride isocentration contour at 20 to 25 feet in ppm
- 50 Methylen chloride isocentration contour at 40 to 45 feet in ppm
- 10 Methylen chloride isocentration contour at 20 to 25 feet in ppm
- U20 Underground storage tank
- (10) Aboveground vertical tank
- (20) Aboveground horizontal tank
- Indicates tank is no longer present

MCK0015922



Reference: Facility map provided by McKesson Corporation, undated

Harding Lawson Associates
Engineers and Scientists

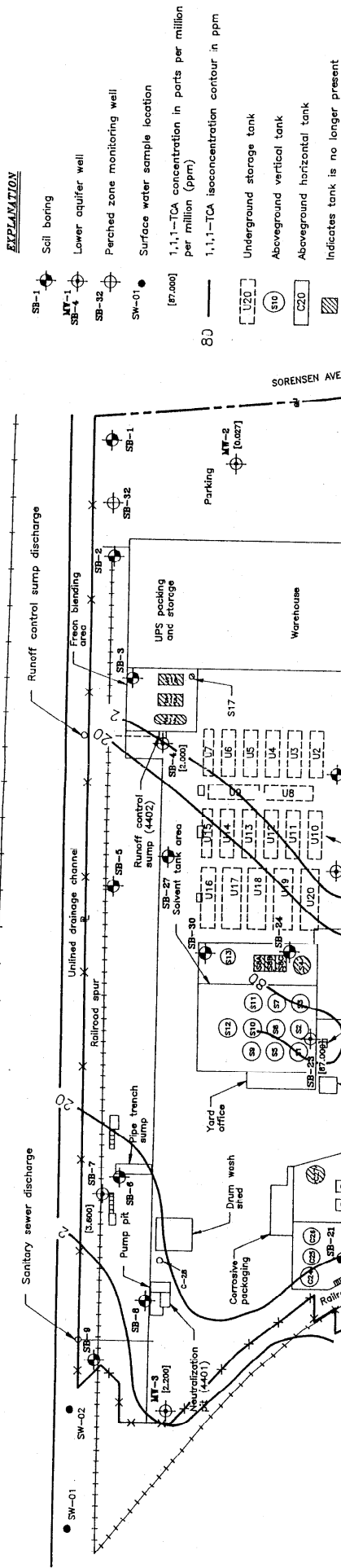
**METHYLENE CHLORIDE SOIL
ISOCONCENTRATION MAP**
McKesson Corporation Property
Santa Fe Springs, California

DRAWN: L.J.H. JOB NUMBER: 17333.149.11 DATE: 12/89
APPROVED: [Signature] REVISION: 11/90

T-CHEM COMPANY

ANGELES CHEMICAL COMPANY

SOUTHERN PACIFIC RAILROAD



AGRICULTURAL FIELD

T-CHEM COMPANY

MCK0015921



Scale 0 30 60 feet

EXPLANATION

- SB-1 Soil boring
- MT-1 Lower aquifer well
- SB-4 Perched zone monitoring well
- SB-32 Surface water sample location
- SW-01 1,1,1-TCA concentration in parts per million (ppm)
- 80 1,1,1-TCA isocentration contour in ppm
- 100 1,1,1-TCA isocentration contour in ppm
- 120 1,1,1-TCA isocentration contour in ppm
- 140 1,1,1-TCA isocentration contour in ppm
- 160 1,1,1-TCA isocentration contour in ppm
- 180 1,1,1-TCA isocentration contour in ppm
- 200 1,1,1-TCA isocentration contour in ppm
- 220 1,1,1-TCA isocentration contour in ppm
- 240 1,1,1-TCA isocentration contour in ppm
- 260 1,1,1-TCA isocentration contour in ppm
- 280 1,1,1-TCA isocentration contour in ppm
- 300 1,1,1-TCA isocentration contour in ppm
- 320 1,1,1-TCA isocentration contour in ppm
- 340 1,1,1-TCA isocentration contour in ppm
- 360 1,1,1-TCA isocentration contour in ppm
- 380 1,1,1-TCA isocentration contour in ppm
- 400 1,1,1-TCA isocentration contour in ppm
- 420 1,1,1-TCA isocentration contour in ppm
- 440 1,1,1-TCA isocentration contour in ppm
- 460 1,1,1-TCA isocentration contour in ppm
- 480 1,1,1-TCA isocentration contour in ppm
- 500 1,1,1-TCA isocentration contour in ppm
- 520 1,1,1-TCA isocentration contour in ppm
- 540 1,1,1-TCA isocentration contour in ppm
- 560 1,1,1-TCA isocentration contour in ppm
- 580 1,1,1-TCA isocentration contour in ppm
- 600 1,1,1-TCA isocentration contour in ppm
- 620 1,1,1-TCA isocentration contour in ppm
- 640 1,1,1-TCA isocentration contour in ppm
- 660 1,1,1-TCA isocentration contour in ppm
- 680 1,1,1-TCA isocentration contour in ppm
- 700 1,1,1-TCA isocentration contour in ppm
- 720 1,1,1-TCA isocentration contour in ppm
- 740 1,1,1-TCA isocentration contour in ppm
- 760 1,1,1-TCA isocentration contour in ppm
- 780 1,1,1-TCA isocentration contour in ppm
- 800 1,1,1-TCA isocentration contour in ppm
- 820 1,1,1-TCA isocentration contour in ppm
- 840 1,1,1-TCA isocentration contour in ppm
- 860 1,1,1-TCA isocentration contour in ppm
- 880 1,1,1-TCA isocentration contour in ppm
- 900 1,1,1-TCA isocentration contour in ppm
- 920 1,1,1-TCA isocentration contour in ppm
- 940 1,1,1-TCA isocentration contour in ppm
- 960 1,1,1-TCA isocentration contour in ppm
- 980 1,1,1-TCA isocentration contour in ppm
- 1000 1,1,1-TCA isocentration contour in ppm

Reference: Facility map provided by McKesson Corporation, undated

Harding Lawson Associates
Engineers and Geoscientists



1,1,1-TCA GROUND-WATER
ISOCENTRATION MAP
McKesson Corporation Property
Santa Fe Springs, California

DATE 12/89
JOB NUMBER 17333,149.11
DRAWN L.J.H.
APPROVED [Signature]
REVIEWED [Signature]
DATE 11/90

PLATE 10

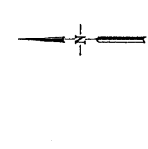
ANGELES CHEMICAL COMPANY

SOUTHERN PACIFIC RAILROAD

EXPLANATION

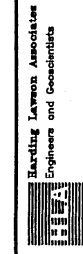
- SB-1 Soil boring
- MT-1 Lower aquifer well
- SB-4 Perched zone monitoring well
- SB-32 Surface water sample location
- SW-01 PCE concentration in parts per million (ppm)
- [4.200] PCE isoconcentration contour in ppm
- 4 Underground storage tank
- [J20] Aboveground vertical tank
- [S10] Aboveground horizontal tank
- [C20] Indicates tank is no longer present

MCK0015920



FONTAIN TRUCKING COMPANY

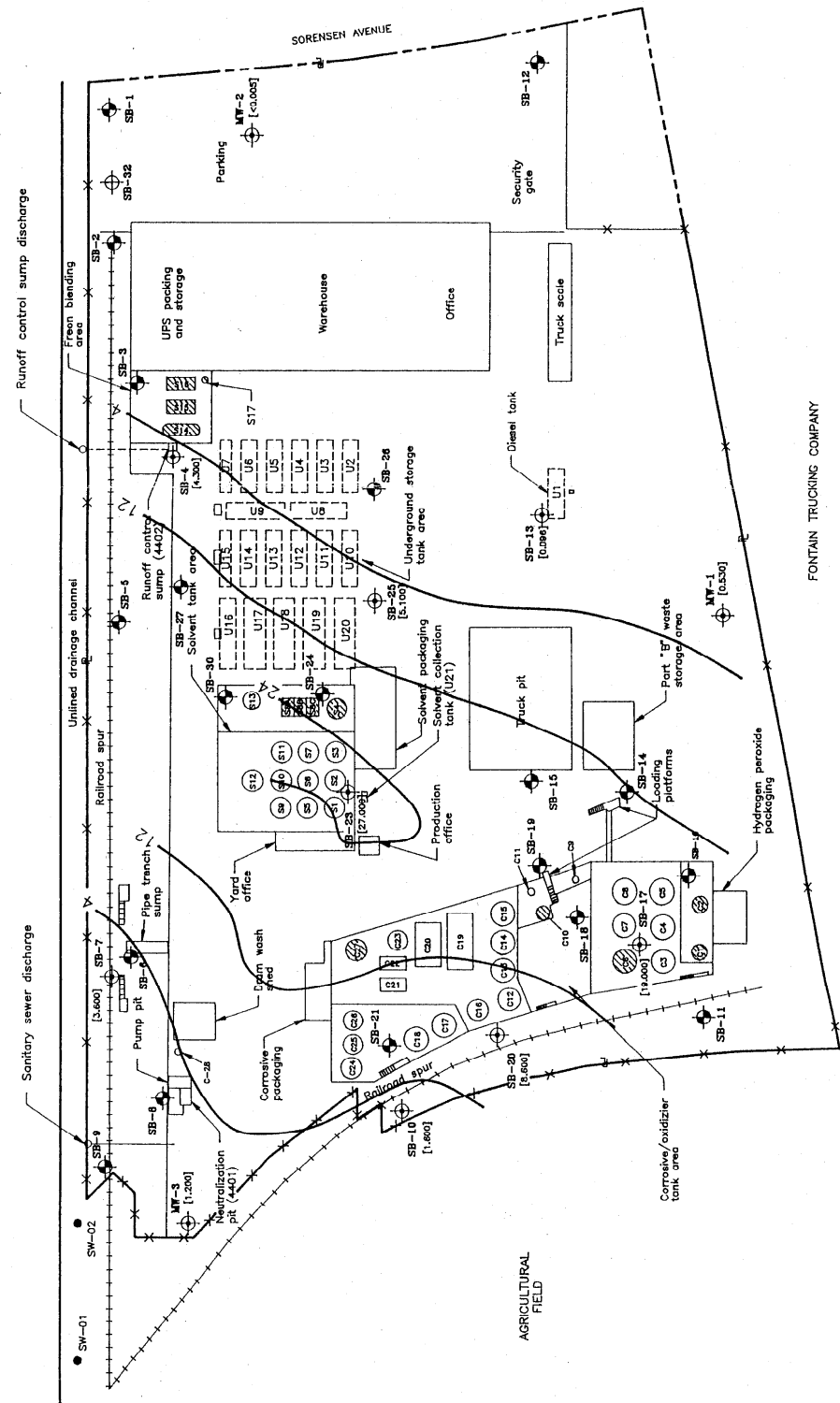
Reference: Facility map provided by McKesson Corporation, undated



**PCE GROUND-WATER
ISOCONCENTRATION MAP**
McKesson Corporation Property
Santa Fe Springs, California

PLATE
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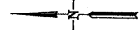


T-CHEM COMPANY

EXPLANATION

- SB-1 Soil boring
- NY-1 Lower aquifer well
- SB-32 Perched zone monitoring well
- SW-01 Surface water sample location
- TCE concentration in parts per million (ppm)
- TCE is concentration contour in ppm
- Underground storage tank
- Aboveground vertical tank
- Aboveground horizontal tank
- Indicates tank is no longer present

MCK0015919



Scale 0 30 60 feet

Reference: Facility map provided by McKesson Corporation, undated

Harding Lawson Associates
Engineers and Geoscientists



PLATE 1

**TCE GROUND-WATER
ISOCONCENTRATION MAP**
McKesson Corporation
Santa Fe Springs, Calif.

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DATE 12/89

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JH

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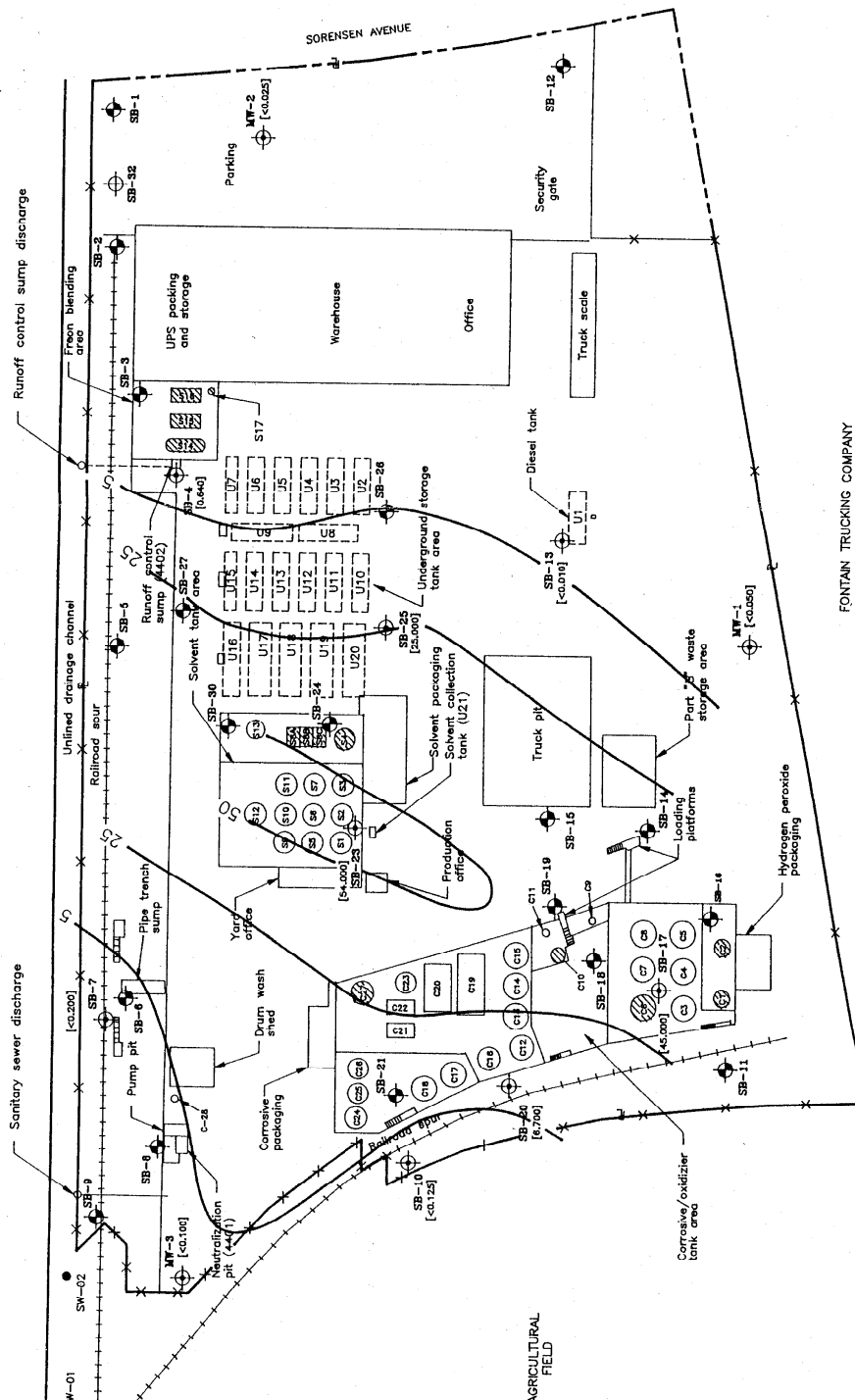
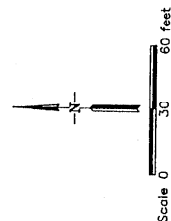
□

ANGELES CHEMICAL COMPANY

SOUTHERN PACIFIC RAILROAD

- EXPLANATION**
- SB-1 Soil boring
 - MF-1 Lower aquifer well
 - SB-4 Perched zone monitoring well
 - SB-32 Surface water sample location
 - SW-01 Methylen chloride concentration in ppm
 - [<0.025] Methylen chloride isocentration contour
 - 50
 - [U20] Underground storage tank
 - [S10] Aboveground vertical tank
 - [C20] Aboveground horizontal tank
 - Indicates tank is no longer present

MCK0015918



Reference: Facility map provided by McKesson Corporation, undated

Handing Lawren Associates
Engineers and Scientists

**METHYLENE CHLORIDE GROUND-WATER
ISOCONCENTRATION MAP**
McKesson Corporation Property
Santa Fe Springs, California

13

DATE 12/89
REVISED 8

DATE 11/90

APPROVED 88

JOB NUMBER 17333,149.11

DRAWN LJH

FONTAIN TRUCKING COMPANY

T-CHEN COMPANY

ANGELES CHEMICAL COMPANY

SOUTHERN PACIFIC RAILROAD

Sanitary sewer discharge

Runoff control sump discharge

EXPLANATION

SB-1 Soil boring

MT-1 Lower aquifer well

SB-32 Perched zone monitoring well

SW-01 Surface water sample location

SB-33 (15) Proposed soil boring and/or monitoring well (with anticipated depth)

Proposed backhoe trenching (schematic location)

Cone penetrometer test general survey location

Underground storage tank

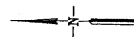
Aboveground vertical tank

Aboveground horizontal tank

Indicates tank is no longer present

MCK0015917

Scale 0 30 60 feet



Reference: Facility map provided by McKesson Corporation, undated

Harding Lawson Associates
Engineers and Geoscientists

PROPOSED WORK LOCATIONS
McKesson Corporation Property
Santa Fe Springs, California

14

DRAWN LUH

JOB NUMBER 17333,149.11

APPROVED [Signature]

DATE 12/89

REVISIONS [Signature]

DATE 11/90

AGRICULTURAL FIELD

T-CHEM COMPANY

FOUNTAIN TRUCKING COMPANY

Attachment 15

Enseco - Air Toxics Laboratory

18501 East Gate Avenue, Suite 150
City of Industry, CA 91748-1521
818) 965-1006 • FAX (818) 965-1003

R E V I E W E D
AUG 30 1993

GEOMATRIX CONSULTANTS, INC.
SOCAL

August 28, 1993

GEOMATRIX CONSULTANTS
20201 S.W. Birch St., Ste. 150
Santa Ana Heights, CA 92707
ATTN: MR. MARK RIPPBERGER

ANALYSIS NO.: 101920-0001/0003-SA
ANALYSES: Volatile Organics by
GCMS - EPA TO14
DATE SAMPLED: 08/05/93
DATE SAMPLE REC'D: 08/06/83


PROJECT NO.: 2782
2282

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: 101920-0001/0003-SA as shown above.

The samples were received by Enseco Air Toxics Laboratory, intact and with the chain-of-custody record attached.

Please note that ND means not detected at the reporting limits expressed.

The preliminary results were faxed to Mr. Mark Rippberger at 4:59 p.m. on August 17, 1993.



REVIEWED



APPROVED

SAMPLE DESCRIPTION INFORMATION
for
Geomatrix Consultants

| Lab ID | Client ID | Matrix | Sampled | | Received |
|----------------|-----------|--------|-----------|-------|-----------|
| | | | Date | Time | Date |
| 101920-0001-SA | E-1-1 | AIR | 05 AUG 93 | 12:14 | 06 AUG 93 |
| 101920-0002-SA | E-1-2 | AIR | 05 AUG 93 | 13:25 | 06 AUG 93 |
| 101920-0003-SA | V-1 | AIR | 05 AUG 93 | 15:30 | 06 AUG 93 |

MCK - JM - 01 - 0495

Volatile Organics by GCMS - EPA TO14

Client Name: Geomatrix Consultants

Client ID: E-1-1

Lab ID: 101920-0001-SA

Matrix: AIR

Authorized: 06 AUG 93

Sampled: 05 AUG 93

Prepared: NA

Received: 06 AUG 93

Analyzed: 08 AUG 93

| Parameter | Result | Units | Reporting Limit |
|---|----------|-----------|-----------------|
| Dichlorodifluoromethane | ND | ppb (v/v) | 200000 |
| Chloromethane | ND | ppb (v/v) | 400000 |
| 1,2-Dichlorotetra- fluoroethane | ND | ppb (v/v) | 200000 |
| Vinyl chloride | ND | ppb (v/v) | 200000 |
| Bromomethane | ND | ppb (v/v) | 200000 |
| Chloroethane | ND | ppb (v/v) | 400000 |
| Trichlorofluoromethane | ND | ppb (v/v) | 200000 |
| 1,1-Dichloroethene | 1300000 | ppb (v/v) | 200000 |
| Carbon disulfide | ND | ppb (v/v) | 1000000 |
| 1,1,2-Trichloro-1,2,2- trifluoroethane | 420000 | ppb (v/v) | 200000 |
| Acetone | 2100000 | ppb (v/v) | 1000000 |
| Methylene chloride | 6700000 | ppb (v/v) | 200000 |
| trans-1,2-Dichloroethene | ND | ppb (v/v) | 200000 |
| 1,1-Dichloroethane | 420000 | ppb (v/v) | 200000 |
| Vinyl acetate | ND | ppb (v/v) | 1000000 |
| cis-1,2-Dichloroethene | ND | ppb (v/v) | 200000 |
| 2-Butanone | ND | ppb (v/v) | 1000000 |
| Chloroform | ND | ppb (v/v) | 200000 |
| 1,1,1-Trichloroethane | 25000000 | ppb (v/v) | 200000 |
| Carbon tetrachloride | ND | ppb (v/v) | 200000 |
| Benzene | ND | ppb (v/v) | 200000 |
| 1,2-Dichloroethane | ND | ppb (v/v) | 200000 |
| Trichloroethene | 820000 | ppb (v/v) | 200000 |
| 1,2-Dichloropropane | ND | ppb (v/v) | 200000 |
| Bromodichloromethane | ND | ppb (v/v) | 200000 |
| cis-1,3-Dichloropropene | ND | ppb (v/v) | 200000 |
| 4-Methyl-2-pentanone | ND | ppb (v/v) | 400000 |
| Toluene | 1900000 | ppb (v/v) | 200000 |
| trans-1,3-Dichloropropene | ND | ppb (v/v) | 200000 |
| 1,1,2-Trichloroethane | ND | ppb (v/v) | 200000 |
| Tetrachloroethene | 2600000 | ppb (v/v) | 200000 |
| 2-Hexanone | ND | ppb (v/v) | 400000 |
| Dibromochloromethane | ND | ppb (v/v) | 200000 |
| 1,2-Dibromoethane (EDB) | ND | ppb (v/v) | 200000 |
| Chlorobenzene | ND | ppb (v/v) | 200000 |
| Ethylbenzene | ND | ppb (v/v) | 200000 |
| Xylenes (total) | ND | ppb (v/v) | 200000 |
| Styrene | ND | ppb (v/v) | 200000 |
| Bromoform | ND | ppb (v/v) | 200000 |

(continued on following page)

ND = Not detected

NA = Not applicable

Reported By: Lina Wong

Approved By: Bob Sundberg

MCK - JM - 01 - 0495

Volatile Organics by GCMS - EPA TO14 (CONT.)

Client Name: Geomatrix Consultants

Client ID: E-1-1

Lab ID: 101920-0001-SA

Matrix: AIR

Authorized: 06 AUG 93

Sampled: 05 AUG 93

Prepared: NA

Received: 06 AUG 93

Analyzed: 08 AUG 93

| Parameter | Result | Units | Reporting Limit |
|---------------------------|--------|-----------|-----------------|
| 1,1,2,2-Tetrachloroethane | ND | ppb (v/v) | 200000 |
| Benzyl chloride | ND | ppb (v/v) | 200000 |
| 4-Ethyl toluene | ND | ppb (v/v) | 200000 |
| 1,3,5-Trimethylbenzene | ND | ppb (v/v) | 200000 |
| 1,2,4-Trimethylbenzene | ND | ppb (v/v) | 200000 |
| 1,3-Dichlorobenzene | ND | ppb (v/v) | 200000 |
| 1,4-Dichlorobenzene | ND | ppb (v/v) | 200000 |
| 1,2-Dichlorobenzene | ND | ppb (v/v) | 200000 |
| 1,2,4-Trichlorobenzene | ND | ppb (v/v) | 400000 |
| Hexachlorobutadiene | ND | ppb (v/v) | 400000 |

ND = Not detected

NA = Not applicable

Reported By: Lina Wong

Approved By: Bob Sundberg

MCK - JM - 01 -

0497

Volatile Organics by GCMS - EPA TO14

Client Name: Geomatrix Consultants

Client ID: E-1-2

Lab ID: 101920-0002-SA

Matrix: AIR

Authorized: 06 AUG 93

Sampled: 05 AUG 93

Prepared: NA

Received: 06 AUG 93

Analyzed: 08 AUG 93

| Parameter | Result | Units | Reporting Limit |
|---|----------|-----------|-----------------|
| Dichlorodifluoromethane | ND | ppb (v/v) | 200000 |
| Chloromethane | ND | ppb (v/v) | 400000 |
| 1,2-Dichlorotetra- fluoroethane | ND | ppb (v/v) | 200000 |
| Vinyl chloride | ND | ppb (v/v) | 200000 |
| Bromomethane | ND | ppb (v/v) | 200000 |
| Chloroethane | ND | ppb (v/v) | 400000 |
| Trichlorofluoromethane | ND | ppb (v/v) | 200000 |
| 1,1-Dichloroethene | 1200000 | ppb (v/v) | 200000 |
| Carbon disulfide | ND | ppb (v/v) | 1000000 |
| 1,1,2-Trichloro-1,2,2- trifluoroethane | 380000 | ppb (v/v) | 200000 |
| Acetone | 1900000 | ppb (v/v) | 1000000 |
| Methylene chloride | 6200000 | ppb (v/v) | 200000 |
| trans-1,2-Dichloroethene | ND | ppb (v/v) | 200000 |
| 1,1-Dichloroethane | 370000 | ppb (v/v) | 200000 |
| Vinyl acetate | ND | ppb (v/v) | 1000000 |
| cis-1,2-Dichloroethene | ND | ppb (v/v) | 200000 |
| 2-Butanone | ND | ppb (v/v) | 1000000 |
| Chloroform | ND | ppb (v/v) | 200000 |
| 1,1,1-Trichloroethane | 24000000 | ppb (v/v) | 200000 |
| Carbon tetrachloride | ND | ppb (v/v) | 200000 |
| Benzene | ND | ppb (v/v) | 200000 |
| 1,2-Dichloroethane | ND | ppb (v/v) | 200000 |
| Trichloroethene | 710000 | ppb (v/v) | 200000 |
| 1,2-Dichloropropane | ND | ppb (v/v) | 200000 |
| Bromodichloromethane | ND | ppb (v/v) | 200000 |
| cis-1,3-Dichloropropene | ND | ppb (v/v) | 200000 |
| 4-Methyl-2-pentanone | ND | ppb (v/v) | 400000 |
| Toluene | 1700000 | ppb (v/v) | 200000 |
| trans-1,3-Dichloropropene | ND | ppb (v/v) | 200000 |
| 1,1,2-Trichloroethane | ND | ppb (v/v) | 200000 |
| Tetrachloroethene | 2200000 | ppb (v/v) | 200000 |
| 2-Hexanone | ND | ppb (v/v) | 400000 |
| Dibromochloromethane | ND | ppb (v/v) | 200000 |
| 1,2-Dibromoethane (EDB) | ND | ppb (v/v) | 200000 |
| Chlorobenzene | ND | ppb (v/v) | 200000 |
| Ethylbenzene | ND | ppb (v/v) | 200000 |
| Xylenes (total) | ND | ppb (v/v) | 200000 |
| Styrene | ND | ppb (v/v) | 200000 |
| Bromoform | ND | ppb (v/v) | 200000 |

(continued on following page)

ND = Not detected

NA = Not applicable

Reported By: Lina Wong

Approved By: Bob Sundberg

MCK - JM - 01 - 0498

Volatile Organics by GCMS - EPA TO14 (CONT.)

Client Name: Geomatrix Consultants

Client ID: E-1-2

Lab ID: 101920-0002-SA

Matrix: AIR

Sampled: 05 AUG 93

Received: 06 AUG 93

Authorized: 06 AUG 93

Prepared: NA

Analyzed: 08 AUG 93

| Parameter | Result | Units | Reporting Limit |
|---------------------------|--------|-----------|--------------------|
| 1,1,2,2-Tetrachloroethane | ND | ppb (v/v) | 200000 |
| Benzyl chloride | ND | ppb (v/v) | 200000 |
| 4-Ethyl toluene | ND | ppb (v/v) | 200000 |
| 1,3,5-Trimethylbenzene | ND | ppb (v/v) | 200000 |
| 1,2,4-Trimethylbenzene | ND | ppb (v/v) | 200000 |
| 1,3-Dichlorobenzene | ND | ppb (v/v) | 200000 |
| 1,4-Dichlorobenzene | ND | ppb (v/v) | 200000 |
| 1,2-Dichlorobenzene | ND | ppb (v/v) | 200000 |
| 1,2,4-Trichlorobenzene | ND | ppb (v/v) | 400000 |
| Hexachlorobutadiene | ND | ppb (v/v) | 400000 |

ND = Not detected

NA = Not applicable

Reported By: Lina Wong

Approved By: Bob Sundberg

MCK - JM - 01 - 0499

Volatile Organics by GCMS - EPA TO14

Client Name: Geomatrix Consultants

Client ID: E-1-1

Lab ID: 101920-0001-SA

Matrix: AIR

Authorized: 06 AUG 93

Sampled: 05 AUG 93

Prepared: NA

Received: 06 AUG 93

Analyzed: 08 AUG 93

| Parameter | Result | Units | Reporting Limit |
|---|--------|-------|-----------------|
| Dichlorodifluoromethane | ND | ug/L | 990 |
| Chloromethane | ND | ug/L | 820 |
| 1,2-Dichlorotetra- fluoroethane | ND | ug/L | 1400 |
| Vinyl chloride | ND | ug/L | 510 |
| Bromomethane | ND | ug/L | 780 |
| Chloroethane | ND | ug/L | 1100 |
| Trichlorofluoromethane | ND | ug/L | 1100 |
| 1,1-Dichloroethene | 5200 | ug/L | 810 |
| Carbon disulfide | ND | ug/L | 3100 |
| 1,1,2-Trichloro-1,2,2- trifluoroethane | 3200 | ug/L | 1500 |
| Acetone | 4900 | ug/L | 2400 |
| Methylene chloride | 23000 | ug/L | 690 |
| trans-1,2-Dichloroethene | ND | ug/L | 810 |
| 1,1-Dichloroethane | 1700 | ug/L | 820 |
| Vinyl acetate | ND | ug/L | 3500 |
| cis-1,2-Dichloroethene | ND | ug/L | 810 |
| 2-Butanone | ND | ug/L | 2600 |
| Chloroform | ND | ug/L | 970 |
| 1,1,1-Trichloroethane | 140000 | ug/L | 1100 |
| Carbon tetrachloride | ND | ug/L | 1200 |
| Benzene | ND | ug/L | 640 |
| 1,2-Dichloroethane | ND | ug/L | 820 |
| Trichloroethene | 4400 | ug/L | 1100 |
| 1,2-Dichloropropane | ND | ug/L | 910 |
| Bromodichloromethane | ND | ug/L | 1300 |
| cis-1,3-Dichloropropene | ND | ug/L | 910 |
| 4-Methyl-2-pentanone | ND | ug/L | 1400 |
| Toluene | 7200 | ug/L | 750 |
| trans-1,3-Dichloropropene | ND | ug/L | 910 |
| 1,1,2-Trichloroethane | ND | ug/L | 1100 |
| Tetrachloroethene | 16000 | ug/L | 1300 |
| 2-Hexanone | ND | ug/L | 1600 |
| Dibromochloromethane | ND | ug/L | 1700 |
| 1,2-Dibromoethane (EDB) | ND | ug/L | 1500 |
| Chlorobenzene | ND | ug/L | 920 |
| Ethylbenzene | ND | ug/L | 870 |
| Xylenes (total) | ND | ug/L | 1700 |
| Styrene | ND | ug/L | 850 |
| Bromoform | ND | ug/L | 2100 |

(continued on following page)

ND = Not detected

NA = Not applicable

Reported By: Lina Wong

Approved By: Bob Sundberg

MCK - JM - 01 -

0500

Volatile Organics by GCMS - EPA TO14 (CONT.)

Client Name: Geomatrix Consultants

Client ID: E-1-1

Lab ID: 101920-0001-SA

Matrix: AIR

Sampled: 05 AUG 93

Received: 06 AUG 93

Authorized: 06 AUG 93

Prepared: NA

Analyzed: 08 AUG 93

| Parameter | Result | Units | Reporting Limit |
|---------------------------|--------|-------|--------------------|
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1400 |
| Benzyl chloride | ND | ug/L | 1000 |
| 4-Ethyl toluene | ND | ug/L | 990 |
| 1,3,5-Trimethylbenzene | ND | ug/L | 980 |
| 1,2,4-Trimethylbenzene | ND | ug/L | 980 |
| 1,3-Dichlorobenzene | ND | ug/L | 1200 |
| 1,4-Dichlorobenzene | ND | ug/L | 1200 |
| 1,2-Dichlorobenzene | ND | ug/L | 1200 |
| 1,2,4-Trichlorobenzene | ND | ug/L | 3000 |
| Hexachlorobutadiene | ND | ug/L | 4200 |

ND = Not detected
NA = Not applicable

Reported By: Lina Wong

Approved By: Bob Sundberg

MCK - JM - 01 -

0501

Volatile Organics by GCMS - EPA TO14

Client Name: Geomatrix Consultants

Client ID: E-1-2

Lab ID: 101920-0002-SA

Matrix: AIR

Authorized: 06 AUG 93

Sampled: 05 AUG 93

Prepared: NA

Received: 06 AUG 93

Analyzed: 08 AUG 93

| Parameter | Result | Units | Reporting Limit |
|---|--------|-------|-----------------|
| Dichlorodifluoromethane | ND | ug/L | 990 |
| Chloromethane | ND | ug/L | 820 |
| 1,2-Dichlorotetra- fluoroethane | ND | ug/L | 1400 |
| Vinyl chloride | ND | ug/L | 510 |
| Bromomethane | ND | ug/L | 780 |
| Chloroethane | ND | ug/L | 1100 |
| Trichlorofluoromethane | ND | ug/L | 1100 |
| 1,1-Dichloroethene | 4800 | ug/L | 810 |
| Carbon disulfide | ND | ug/L | 3100 |
| 1,1,2-Trichloro-1,2,2- trifluoroethane | 2900 | ug/L | 1500 |
| Acetone | 4600 | ug/L | 2400 |
| Methylene chloride | 22000 | ug/L | 690 |
| trans-1,2-Dichloroethene | ND | ug/L | 810 |
| 1,1-Dichloroethane | 1500 | ug/L | 820 |
| Vinyl acetate | ND | ug/L | 3500 |
| cis-1,2-Dichloroethene | ND | ug/L | 810 |
| 2-Butanone | ND | ug/L | 2600 |
| Chloroform | ND | ug/L | 970 |
| 1,1,1-Trichloroethane | 130000 | ug/L | 1100 |
| Carbon tetrachloride | ND | ug/L | 1200 |
| Benzene | ND | ug/L | 640 |
| 1,2-Dichloroethane | ND | ug/L | 820 |
| Trichloroethene | 3800 | ug/L | 1100 |
| 1,2-Dichloropropane | ND | ug/L | 910 |
| Bromodichloromethane | ND | ug/L | 1300 |
| cis-1,3-Dichloropropene | ND | ug/L | 910 |
| 4-Methyl-2-pentanone | ND | ug/L | 1400 |
| Toluene | 6400 | ug/L | 750 |
| trans-1,3-Dichloropropene | ND | ug/L | 910 |
| 1,1,2-Trichloroethane | ND | ug/L | 1100 |
| Tetrachloroethene | 14000 | ug/L | 1300 |
| 2-Hexanone | ND | ug/L | 1600 |
| Dibromochloromethane | ND | ug/L | 1700 |
| 1,2-Dibromoethane (EDB) | ND | ug/L | 1500 |
| Chlorobenzene | ND | ug/L | 920 |
| Ethylbenzene | ND | ug/L | 870 |
| Xylenes (total) | ND | ug/L | 870 |
| Styrene | ND | ug/L | 850 |
| Bromoform | ND | ug/L | 2100 |

(continued on following page)

ND = Not detected

NA = Not applicable

Reported By: Lina Wong

Approved By: Bob Sundberg

MCK - JM - 01 - 0502

Volatile Organics by GCMS - EPA TO14 (CONT.)

Client Name: Geomatrix Consultants

Client ID: E-1-2

Lab ID: 101920-0002-SA

Matrix: AIR

Sampled: 05 AUG 93

Received: 06 AUG 93

Authorized: 06 AUG 93

Prepared: NA

Analyzed: 08 AUG 93

| Parameter | Result | Units | Reporting Limit |
|---------------------------|--------|-------|-----------------|
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1400 |
| Benzyl chloride | ND | ug/L | 1000 |
| 4-Ethyl toluene | ND | ug/L | 990 |
| 1,3,5-Trimethylbenzene | ND | ug/L | 980 |
| 1,2,4-Trimethylbenzene | ND | ug/L | 980 |
| 1,3-Dichlorobenzene | ND | ug/L | 1200 |
| 1,4-Dichlorobenzene | ND | ug/L | 1200 |
| 1,2-Dichlorobenzene | ND | ug/L | 1200 |
| 1,2,4-Trichlorobenzene | ND | ug/L | 3000 |
| Hexachlorobutadiene | ND | ug/L | 4200 |

ND = Not detected

NA = Not applicable

Reported By: Lina Wong

Approved By: Bob Sundberg

MCK - JM - 01 -

0503

Volatile Organics by GCMS - EPA TO14

Client Name: Geomatrix Consultants

Client ID: V-1

Lab ID: 101920-0003-SA

Matrix: AIR

Authorized: 06 AUG 93

Sampled: 05 AUG 93

Prepared: NA

Received: 06 AUG 93

Analyzed: 08 AUG 93

| Parameter | Result | Units | Reporting Limit |
|---|---------|-----------|-----------------|
| Dichlorodifluoromethane | ND | ppb (v/v) | 20000 |
| Chloromethane | ND | ppb (v/v) | 40000 |
| 1,2-Dichlorotetra- fluoroethane | ND | ppb (v/v) | 20000 |
| Vinyl chloride | 31000 | ppb (v/v) | 20000 |
| Bromomethane | ND | ppb (v/v) | 20000 |
| Chloroethane | ND | ppb (v/v) | 40000 |
| Trichlorofluoromethane | 25000 | ppb (v/v) | 20000 |
| 1,1-Dichloroethene | 1000000 | ppb (v/v) | 20000 |
| Carbon disulfide | ND | ppb (v/v) | 100000 |
| 1,1,2-Trichloro-1,2,2- trifluoroethane | 180000 | ppb (v/v) | 20000 |
| Acetone | ND | ppb (v/v) | 100000 |
| Methylene chloride | 110000 | ppb (v/v) | 20000 |
| trans-1,2-Dichloroethene | ND | ppb (v/v) | 20000 |
| 1,1-Dichloroethane | 150000 | ppb (v/v) | 20000 |
| Vinyl acetate | ND | ppb (v/v) | 100000 |
| cis-1,2-Dichloroethene | 99000 | ppb (v/v) | 20000 |
| 2-Butanone | ND | ppb (v/v) | 100000 |
| Chloroform | ND | ppb (v/v) | 20000 |
| 1,1,1-Trichloroethane | 1300000 | ppb (v/v) | 20000 |
| Carbon tetrachloride | ND | ppb (v/v) | 20000 |
| Benzene | ND | ppb (v/v) | 20000 |
| 1,2-Dichloroethane | ND | ppb (v/v) | 20000 |
| Trichloroethene | 120000 | ppb (v/v) | 20000 |
| 1,2-Dichloropropane | ND | ppb (v/v) | 20000 |
| Bromodichloromethane | ND | ppb (v/v) | 20000 |
| cis-1,3-Dichloropropene | ND | ppb (v/v) | 20000 |
| 4-Methyl-2-pentanone | ND | ppb (v/v) | 40000 |
| Toluene | 56000 | ppb (v/v) | 20000 |
| trans-1,3-Dichloropropene | ND | ppb (v/v) | 20000 |
| 1,1,2-Trichloroethane | ND | ppb (v/v) | 20000 |
| Tetrachloroethene | 400000 | ppb (v/v) | 20000 |
| 2-Hexanone | ND | ppb (v/v) | 40000 |
| Dibromochloromethane | ND | ppb (v/v) | 20000 |
| 1,2-Dibromoethane (EDB) | ND | ppb (v/v) | 20000 |
| Chlorobenzene | ND | ppb (v/v) | 20000 |
| Ethylbenzene | ND | ppb (v/v) | 20000 |
| Xylenes (total) | ND | ppb (v/v) | 20000 |
| Styrene | ND | ppb (v/v) | 20000 |
| Bromoform | ND | ppb (v/v) | 20000 |

(continued on following page)

 ND = Not detected
 NA = Not applicable

Reported By: Lina Wong

Approved By: Bob Sundberg

MCK - JM - 01 - 0504

Volatile Organics by GCMS - EPA TO14 (CONT.)

Client Name: Geomatrix Consultants

Client ID: V-1

Lab ID: 101920-0003-SA

Matrix: AIR

Authorized: 06 AUG 93

Sampled: 05 AUG 93

Prepared: NA

Received: 06 AUG 93

Analyzed: 08 AUG 93

| Parameter | Result | Units | Reporting Limit |
|---------------------------|--------|-----------|-----------------|
| 1,1,2,2-Tetrachloroethane | ND | ppb (v/v) | 20000 |
| Benzyl chloride | ND | ppb (v/v) | 20000 |
| 4-Ethyl toluene | ND | ppb (v/v) | 20000 |
| 1,3,5-Trimethylbenzene | ND | ppb (v/v) | 20000 |
| 1,2,4-Trimethylbenzene | ND | ppb (v/v) | 20000 |
| 1,3-Dichlorobenzene | ND | ppb (v/v) | 20000 |
| 1,4-Dichlorobenzene | ND | ppb (v/v) | 20000 |
| 1,2-Dichlorobenzene | ND | ppb (v/v) | 20000 |
| 1,2,4-Trichlorobenzene | ND | ppb (v/v) | 40000 |
| Hexachlorobutadiene | ND | ppb (v/v) | 40000 |

ND = Not detected

NA = Not applicable

Reported By: Lina Wong

Approved By: Bob Sundberg

MCK - JM - 01 - 0505

Volatile Organics by GCMS - EPA TO14

Client Name: Geomatrix Consultants

Client ID: V-1

Lab ID: 101920-0003-SA

Matrix: AIR

Authorized: 06 AUG 93

Sampled: 05 AUG 93

Prepared: NA

Received: 06 AUG 93

Analyzed: 08 AUG 93

| Parameter | Result | Units | Reporting Limit |
|---|--------|-------|-----------------|
| Dichlorodifluoromethane | ND | ug/L | 99 |
| Chloromethane | ND | ug/L | 82 |
| 1,2-Dichlorotetra- fluoroethane | ND | ug/L | 140 |
| Vinyl chloride | 210 | ug/L | 51 |
| Bromomethane | ND | ug/L | 78 |
| Chloroethane | NA | ug/L | 110 |
| Trichlorofluoromethane | 140 | ug/L | 110 |
| 1,1-Dichloroethene | 4100 | ug/L | 81 |
| Carbon disulfide | ND | ug/L | 310 |
| 1,1,2-Trichloro-1,2,2- trifluoroethane | 1400 | ug/L | 150 |
| Acetone | ND | ug/L | 240 |
| Methylene chloride | 400 | ug/L | 69 |
| trans-1,2-Dichloroethene | ND | ug/L | 81 |
| 1,1-Dichloroethane | 630 | ug/L | 82 |
| Vinyl acetate | ND | ug/L | 350 |
| cis-1,2-Dichloroethene | 400 | ug/L | 81 |
| 2-Butanone | ND | ug/L | 260 |
| Chloroform | ND | ug/L | 97 |
| 1,1,1-Trichloroethane | 7100 | ug/L | 110 |
| Carbon tetrachloride | ND | ug/L | 120 |
| Benzene | ND | ug/L | 64 |
| 1,2-Dichloroethane | ND | ug/L | 82 |
| Trichloroethene | 620 | ug/L | 110 |
| 1,2-Dichloropropane | ND | ug/L | 91 |
| Bromodichloromethane | ND | ug/L | 130 |
| cis-1,3-Dichloropropene | ND | ug/L | 91 |
| 4-Methyl-2-pentanone | ND | ug/L | 140 |
| Toluene | 250 | ug/L | 75 |
| trans-1,3-Dichloropropene | ND | ug/L | 91 |
| 1,1,2-Trichloroethane | ND | ug/L | 110 |
| Tetrachloroethene | 2500 | ug/L | 130 |
| 2-Hexanone | ND | ug/L | 160 |
| Dibromochloromethane | ND | ug/L | 170 |
| 1,2-Dibromoethane (EDB) | ND | ug/L | 150 |
| Chlorobenzene | ND | ug/L | 92 |
| Ethylbenzene | ND | ug/L | 87 |
| Xylenes (total) | ND | ug/L | 170 |
| Styrene | ND | ug/L | 85 |
| Bromoform | ND | ug/L | 210 |

(continued on following page)

ND = Not detected

NA = Not applicable

Reported By: Lina Wong

Approved By: Bob Sundberg

MCK - JM - 01 - 0506

Volatile Organics by GCMS - EPA TO14 (CONT.)

Client Name: Geomatrix Consultants

Client ID: V-1

Lab ID: 101920-0003-SA

Matrix: AIR

Authorized: 06 AUG 93

Sampled: 05 AUG 93

Prepared: NA

Received: 06 AUG 93

Analyzed: 08 AUG 93

| Parameter | Result | Units | Reporting Limit |
|---------------------------|--------|-------|--------------------|
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 140 |
| Benzyl chloride | ND | ug/L | 100 |
| 4-Ethyl toluene | ND | ug/L | 99 |
| 1,3,5-Trimethylbenzene | ND | ug/L | 98 |
| 1,2,4-Trimethylbenzene | ND | ug/L | 98 |
| 1,3-Dichlorobenzene | ND | ug/L | 120 |
| 1,4-Dichlorobenzene | ND | ug/L | 120 |
| 1,2-Dichlorobenzene | ND | ug/L | 120 |
| 1,2,4-Trichlorobenzene | ND | ug/L | 300 |
| Hexachlorobutadiene | ND | ug/L | 420 |

ND = Not detected

NA = Not applicable

Reported By: Lina Wong

Approved By: Bob Sundberg

MCK - JM - 01 - 0507

QC LOT ASSIGNMENT REPORT - MS QC
Air Toxics

| Laboratory Sample Number | QC Matrix | QC Category | QC Lot Number (DCS) | QC Run Number (SCS/BLANK/LCS) | MS QC Run Number (SA,MS,SD,DU) |
|-----------------------------|-----------|-------------|------------------------|----------------------------------|-----------------------------------|
| 101920-0001-SA | AIR | TO-14 | 08 AUG 93-B1 | 08 AUG 93-B1 | |
| 101920-0002-SA | AIR | TO-14 | 08 AUG 93-B1 | 08 AUG 93-B1 | |
| 101920-0003-SA | AIR | TO-14 | 08 AUG 93-B1 | 08 AUG 93-B1 | |

DUPLICATE CONTROL SAMPLE REPORT

Air Toxics

Project: 101920

Category: TO-14 Method TO-14 - Volatile Organics

Matrix: AIR

QC Lot: 08 AUG 93-B1

Concentration Units: ppb (v/v)

| Analyte | Spiked | Concentration | | | Accuracy | | Precision | |
|---------------------------|--------|---------------|----------|------|------------|--------|-----------|-------|
| | | | Measured | | Average(%) | | (RPD) | |
| | | DCS1 | DCS2 | AVG | DCS | Limits | DCS | Limit |
| Methylene chloride | 48.4 | 53.4 | 53.8 | 53.6 | 111 | 86-116 | 0.75 | 10 |
| 1,1-Dichloroethene | 48.4 | 53.5 | 53.5 | 53.5 | 111 | 90-115 | 0.0 | 10 |
| Trichloroethene | 36.7 | 38.7 | 37.9 | 38.3 | 104 | 85-114 | 2.1 | 10 |
| Toluene | 48.4 | 50.4 | 50.9 | 50.6 | 105 | 92-114 | 0.99 | 10 |
| 1,1,2,2-Tetrachloroethane | 55.5 | 58.0 | 56.9 | 57.4 | 104 | 78-124 | 1.3 | 10 |

Calculations are performed before rounding to avoid round-off errors in calculated results.

MCK - JM - 01 - 0509

MKIL060622

METHOD BLANK REPORT

Air Toxics

Project: 101920

Test: TO-14-G

Volatile Organics by GCMS - EPA TO-14

Matrix: AIR

QC Run: 08 AUG 93-B1

| Analyte | Result | Units | Reporting Limit |
|---------------------------------------|--------|-----------|-----------------|
| Dichlorodifluoromethane | ND | ppb (v/v) | 2.0 |
| Chloromethane | ND | ppb (v/v) | 4.0 |
| 1,2-Dichlorotetra-fluoroethane | ND | ppb (v/v) | 2.0 |
| Vinyl chloride | ND | ppb (v/v) | 2.0 |
| Bromomethane | ND | ppb (v/v) | 2.0 |
| Chloroethane | ND | ppb (v/v) | 4.0 |
| Trichlorofluoromethane | ND | ppb (v/v) | 2.0 |
| 1,1-Dichloroethene | ND | ppb (v/v) | 2.0 |
| Carbon disulfide | ND | ppb (v/v) | 10 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | ppb (v/v) | 2.0 |
| Acetone | ND | ppb (v/v) | 10 |
| Methylene chloride | ND | ppb (v/v) | 2.0 |
| trans-1,2-Dichloroethene | ND | ppb (v/v) | 2.0 |
| 1,1-Dichloroethane | ND | ppb (v/v) | 2.0 |
| Vinyl acetate | ND | ppb (v/v) | 10 |
| cis-1,2-Dichloroethene | ND | ppb (v/v) | 2.0 |
| 2-Butanone | ND | ppb (v/v) | 10 |
| Chloroform | ND | ppb (v/v) | 2.0 |
| 1,1,1-Trichloroethane | ND | ppb (v/v) | 2.0 |
| Carbon tetrachloride | ND | ppb (v/v) | 2.0 |
| Benzene | ND | ppb (v/v) | 2.0 |
| 1,2-Dichloroethane | ND | ppb (v/v) | 2.0 |
| Trichloroethene | ND | ppb (v/v) | 2.0 |
| 1,2-Dichloropropane | ND | ppb (v/v) | 2.0 |
| Bromodichloromethane | ND | ppb (v/v) | 2.0 |
| cis-1,3-Dichloropropene | ND | ppb (v/v) | 2.0 |
| 4-Methyl-2-pentanone | ND | ppb (v/v) | 4.0 |
| Toluene | ND | ppb (v/v) | 2.0 |
| trans-1,3-Dichloropropene | ND | ppb (v/v) | 2.0 |
| 1,1,2-Trichloroethane | ND | ppb (v/v) | 2.0 |
| Tetrachloroethene | ND | ppb (v/v) | 2.0 |
| 2-Hexanone | ND | ppb (v/v) | 4.0 |
| Dibromochloromethane | ND | ppb (v/v) | 2.0 |
| 1,2-Dibromoethane (EDB) | ND | ppb (v/v) | 2.0 |
| Chlorobenzene | ND | ppb (v/v) | 2.0 |
| Ethylbenzene | ND | ppb (v/v) | 2.0 |
| Xylenes (total) | ND | ppb (v/v) | 2.0 |
| Styrene | ND | ppb (v/v) | 2.0 |
| Bromoform | ND | ppb (v/v) | 2.0 |
| 1,1,2,2-Tetrachloroethane | ND | ppb (v/v) | 2.0 |
| Benzyl chloride | ND | ppb (v/v) | 2.0 |
| 4-Ethyl toluene | ND | ppb (v/v) | 2.0 |
| 1,3,5-Trimethylbenzene | ND | ppb (v/v) | 2.0 |
| 1,2,4-Trimethylbenzene | ND | ppb (v/v) | 2.0 |
| 1,3-Dichlorobenzene | ND | ppb (v/v) | 2.0 |

ND = Not Detected

MCK - JM - 01 - 0510

METHOD BLANK REPORT

Air Toxics

(cont.)

Project: 101920

Test: TO-14-G

Volatile Organics by GCMS - EPA TO-14

Matrix: AIR

QC Run: 08 AUG 93-B1

| Analyte | Result | Units | Reporting Limit |
|------------------------|--------|-----------|--------------------|
| 1,4-Dichlorobenzene | ND | ppb (v/v) | 2.0 |
| 1,2-Dichlorobenzene | ND | ppb (v/v) | 2.0 |
| 1,2,4-Trichlorobenzene | ND | ppb (v/v) | 4.0 |
| Hexachlorobutadiene | ND | ppb (v/v) | 4.0 |

ND = Not Detected

MCK - JM - 01 - **0511**

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METHOD BLANK REPORT

Air Toxics

(cont.)

Project: 101920

Test: TO-14-UGL-G

Volatile Organics by GCMS - EPA TO-14

Matrix: AIR

QC Run: 08 AUG 93-B1

| Analyte | Result | Units | Reporting Limit |
|---------------------------------------|--------|-------|-----------------|
| Dichlorodifluoromethane | ND | ug/L | 0.010 |
| Chloromethane | ND | ug/L | 0.0050 |
| 1,2-Dichlorotetra-fluoroethane | ND | ug/L | 0.014 |
| Vinyl chloride | ND | ug/L | 0.0060 |
| Bromomethane | ND | ug/L | 0.011 |
| Chloroethane | ND | ug/L | 0.013 |
| Trichlorofluoromethane | ND | ug/L | 0.0050 |
| 1,1-Dichloroethene | ND | ug/L | 0.0080 |
| Carbon disulfide | ND | ug/L | 0.030 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | ug/L | 0.015 |
| Acetone | ND | ug/L | 0.023 |
| Methylene chloride | ND | ug/L | 0.014 |
| trans-1,2-Dichloroethene | ND | ug/L | 0.016 |
| 1,1-Dichloroethane | ND | ug/L | 0.010 |
| Vinyl acetate | ND | ug/L | 0.0090 |
| cis-1,2-Dichloroethene | ND | ug/L | 0.0080 |
| 2-Butanone | ND | ug/L | 0.0070 |
| Chloroform | ND | ug/L | 0.0090 |
| 1,1,1-Trichloroethane | ND | ug/L | 0.011 |
| Carbon tetrachloride | ND | ug/L | 0.012 |
| Benzene | ND | ug/L | 0.0090 |
| 1,2-Dichloroethane | ND | ug/L | 0.0080 |
| Trichloroethene | ND | ug/L | 0.013 |
| 1,2-Dichloropropane | ND | ug/L | 0.035 |
| Bromodichloromethane | ND | ug/L | 0.013 |
| cis-1,3-Dichloropropene | ND | ug/L | 0.013 |
| 4-Methyl-2-pentanone | ND | ug/L | 0.010 |
| Toluene | ND | ug/L | 0.011 |
| trans-1,3-Dichloropropene | ND | ug/L | 0.013 |
| 1,1,2-Trichloroethane | ND | ug/L | 0.016 |
| Tetrachloroethene | ND | ug/L | 0.019 |
| 2-Hexanone | ND | ug/L | 0.020 |
| Dibromochloromethane | ND | ug/L | 0.025 |
| 1,2-Dibromoethane (EDB) | ND | ug/L | 0.015 |
| Chlorobenzene | ND | ug/L | 0.011 |
| Ethylbenzene | ND | ug/L | 0.011 |
| Xylenes (total) | ND | ug/L | 0.022 |
| Styrene | ND | ug/L | 0.030 |
| Bromoform | ND | ug/L | 0.020 |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 0.027 |
| Benzyl chloride | ND | ug/L | 0.010 |
| 4-Ethyl toluene | ND | ug/L | 0.020 |
| 1,3,5-Trimethylbenzene | ND | ug/L | 0.012 |
| 1,2,4-Trimethylbenzene | ND | ug/L | 0.015 |

ND = Not Detected

 MCK - JM - 01 - **0512**

METHOD BLANK REPORT
Air Toxics
Project: 101920

(cont.)

Test: TO-14-UGL-G Volatile Organics by GCMS - EPA TO-14
Matrix: AIR
QC Run: 08 AUG 93-B1

| Analyte | Result | Units | Reporting Limit |
|------------------------|--------|-------|--------------------|
| 1,3-Dichlorobenzene | ND | ug/L | 0.018 |
| 1,4-Dichlorobenzene | ND | ug/L | 0.024 |
| 1,2-Dichlorobenzene | ND | ug/L | 0.030 |
| 1,2,4-Trichlorobenzene | ND | ug/L | 0.050 |
| Hexachlorobutadiene | ND | ug/L | 0.050 |

ND = Not Detected

MCK - JM - 01 -

0513

MKIL060626

[illegible]